LS-PrePost Scripting Command Language, Python Language and Data Center

Version	Date	Author	Changes
Rev.1	July 29,2015	Philip Ho	Base Version
Rev.2	Aug 8, 2016	Philip Ho	
Rev.3	Sept 19, 2017	Philip Ho	
Rev.4	Dec 6, 2018	Luo Liangfeng	Component Name List Update
Rev.5	Dec 18, 2018	Philip Ho	Add Example description
Rev.6	June 10, 2019	Luo Liangfeng	Component Name list Update
Rev.7	June 26, 2020	Luo Liangfeng	Add Element Deletion array extraction
Rev.8	August 16, 2020	He Xi	Add description about Python scripting
Rev.9	July 7, 2022	Luo Liangfeng	Add description of binout reader.
Rev.10	Apr 19,2023	Luo Liangfeng	Component Name List Update
Rev.11	May 14, 2024	Kai Wang	Python version and parameter update

Introduction

The LS-PrePost Scripting Command Language (SCL) is designed to allow users to write their own script to perform data manipulation for many different purposes. The LS-PrePost SCL is a C like computer language that is executed inside LS-PrePost. The user can execute LS-PrePost commands, retrieve LS-DYNA results, apply LS-DYNA data center extraction functions, and extract results from LS-DYNA d3plot files or model data from the keyword input file. Also, perform additional operations to the extracted data that were not developed within LS-PrePost. The resultant data can be output to the LS-PrePost message file, or user created file, or send it back to LS-PrePost for fringing or plotting. This document describes the application functions interface (API) and how to use SCL along with some example scripts for various operations.

The SCL was first developed with a C-Like computer language. Since LS-PrePost 4.8, Python language was also used in SCL. The user can use Python scripting to

do somethings as same as above mentioned. The Python modules in LS-PrePost include DataCenter (provides get_data) and LsPrePost (provides tools of LS-PrePost, like fring_dc_to_model, execute_command, save_dc_to_file, etc.…). The user can take advantage of Python's rich third-party libraries to accomplish their own special tasks.

SCL API Functions

void **ExecuteCommand**(char *cmd)
Purpose: Execute a LS-PrePost command
Input: cmd - a string contains the LS-PrePost command
Return: none
….....

void **Echo**(char *string)
Purpose: Display the text in the LS-PrePost message dialog and in the lspost.msg file
Input: string - text string
Output: none
Return: none
….....

Int **SCLSwitchStateTo**(Int ist)
Purpose: Switch the current state to a specified state
Input: ist - state number, 0 < ist <= largest state
Output: none
Return: flag, 1=success, 0=fail
….....

Int **SCLGetDataCenterInt**(char *parameter_name)
Purpose : Get an integer scalar value from the model. See user parameter name list below for the available scalar values that can be retrieved.
Input: parameter name
Output: none
Return: integer value
….....

Float **SCLGetDataCenterFloat**(char *parameter_name, Int typecode, Int index, Int ipt)
Purpose : Get a floating point value from the model. See Data Center

Parameter Name List below for the available floating point value that can be retrieved.

Input: parameter name
Typecode - Element or node type, constants such as "SOLID", "SHELL", "BEAM", "TSHELL", "NODE","SPHNODE" can be used. Not used for the parameter_name, enter as zero.
Index - Index to element.
Ipt - Integration points or layer. Valid for getting component values from element shell, beam and tshell, such as "MID", "INNER", "OUTER", 1, 2, etc, can be used. Also valid for solid fully integrated, base-1,such as "1","2"..."8" can be used.

Output: none

Return: float value

….....

void **SCLGetDataCenterVector**(char *parameter_name, Int externalid, NDCOOR *result)

Purpose: Get a vector from the model data, a vector such as nodal coordinate, displacement vector, velocity vector, acceleration vector, and so on.

```
typedef   ndcoor {
    Float xyz[3];
} NDCOOR;
```

Input: parameter_name
Externalid - Index in the component value array.

Output: result: vector

Return: none

….....

void **SCLGetDataCenterTensor**(char *parameter_name, Int Typecode, Int externalid, Int ipt, TENSOR *result)

Purpose: Get stress/strain tensor from the model data.

```
typedef tensor{
    Float xyz[6];
} TENSOR;
```

Input: parameter_name- "global_stress" and "global_strain" can be used.
Typecode - Element type or node type, constant such as "SOLID", "SHELL", "BEAM", "TSHELL", "NODE","SPHNODE" can be used. If it parameter is not needed, please give it zero.
Ipt - Integration points or layer. Valid for getting component values from element shell, beam and tshell, such as "MID", "INNER",

"OUTER", 1, 2, etc, can be used. Also valid for solid fully integrated, base-1,such as "1","2"..."8" can be used.

Output: result - tensor

Return: none

….....

Int **SCLGetDataCenterIntArray**(char *parameter_name, Int **results, Int type, Int id)

Purpose: Get an integer array from the model data

Input: parameter_name

type - element type(SHELL, SOLID, TSHELL, etc). If the parameter_name "`elemofpart_ids`" is used, type=0 and type>0(1,2,etc) mean to get the internal and external element id array, respectively.

id - element/part/nodeset/elementset id.

Output: results - integer array

Return: array size

….....

Int **SCLGetDataCenterFloatArray**(char *parameter_name, Int typecode, Int ipt, Float **results)

Purpose: Get a floating point array from the model data

Input: parameter_name

Typecode - Element type or node type, constant such as "SOLID", "SHELL", "BEAM", "TSHELL", "NODE","SPHNODE" can be used. Not used for the parameter_name, enter zero.

Ipt - Integration points or layer. Valid for getting component values from element shell, beam and tshell, such as "MID", "INNER", "OUTER", 1, 2, etc, can be used. Also valid for solid fully integrated, base-1,such as "1","2"..."8" can be used.

Output: results - float array

Return: array size

….....

Int **SCLGetDataCenterVectorArray**(char *parameter_name, NDCOOR **results)

Purpose: Get a vector array from the model data

Input: parameter_name

Output: results: vector array

Return: array size

….....

Int **SCLGetDataCenterTensorArray**(char *parameter_name, Int typecode, Int ipt, TENSOR **results)

Purpose: Get a stress or strain tensor array from the model data

Input: parameter_name- "global_stress" and "global_strain" can be used.
Typecode - Element type or node type, constant such as "SOLID", "SHELL", "BEAM", "TSHELL", "NODE","SPHNODE" can be used. If it parameter is not needed, please give it zero.
Ipt - Integration points or layer. Valid for getting component values from element shell, beam and tshell, such as "MID", "INNER", "OUTER", 1, 2, etc, can be used. Also valid for solid fully integrated, base-1,such as "1","2"..."8" can be used.

Output: results: tensor array

Return: array size

….....

void **SCLFringeDCToModel**(Int typecode, Int avg_opt, Int num, Float* data, Int ist, char *label)

Purpose: Fringe the data center array to current model.

Input: typecode - Node or element type, constant such as "NODE", "0","SOLID","BEAM","SHELL","TSHELL","SPHNODE" can be used.
avg_opt – nodal averaging option, 0=none, 1=nodal
num - array size
data - Float array
ist - State number which data will be assigned
Label - Name of the fringing data to be shown on fringe plot

Output: none

Return: none

….....

void **SCLSaveDCToFile**(char *filename, Int num, Float *data)

Purpose: Save the data center array to file.

Input: filename - name of output file.
Num - array size
Data - Float array

Output: none

Return: none

….....

Int **SCLCmdResultGetValueCount**(void)
Purpose: Get number of results from a LS-PrePost command.
Input: none
Output: none
Return: Number of command results.
….....

Int **SCLCmdResultGetValue**(Int i, Int *type, Int *iv, Float *v)
Purpose: Get value of command results.
Input: i - Index of command results. (starting from 0)
Output: type - Type of command results. 0=integer, 1=float
depends on the data type, one of the following will be used
iv - the integer result
v - the floating point result in double word.
Return: status flag, 1=success, 0=fail
….....

Int **SCLGetUserId**(Int iid, Int dtype)
Purpose: Get the user defined id given an internal id.
Input: iid - Internal id, starting with 0
Dtype - Data type, constant such as NODE, PART, SHELL, SOLID, TSHELL, BEAM, DISCRETE, SEATBELT, SPHNODE can be used.
Output: none
Return: user id
….....

Int **SCLGetInternalID**(Int uid, Int dtype)
purpose: Get internal id given an user id.
Input: uid - User id.
Dtype - Data type, constant such as NODE, PART, SHELL, SOLID, TSHELL, BEAM, DISCRETE, SEATBELT, SPHNODE can be used.
Output: none
Return: Internal id, starting with 0
….....

Int **SCLGetUserPartIDFromUserElementID**(Int uid, Int dtype)

purpose: Get user part id given an user element id.

Input: uid - User id.
Dtype - Data type, constant such as SHELL, SOLID, TSHELL, BEAM and SPHNODE can be used.
Output: none
Return: User part id.
….....

Int **SCLCheckIfPartIsActiveU**(Int uid)
Purpose: Check if a part is active (visible) given a user defined part id
Input: uid - User id.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

Int **SCLCheckIfPartIsActiveI**(Int iid)
Purpose: Check if a part is active (visible) given an internal part id.
Input: iid - internal id.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

Int **SCLCheckIfElementIsActiveU**(Int uid, Int dtype)
Purpose: Check if an element part is active (visible) given an users element id.
Input: uid - User id.
Dtype - Data type, constant such as SHELL, SOLID, TSHELL, BEAM, SPHNODE can be used.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible
….....

Int **SCLCheckIfElementisActiveI**(Int iid, Int dtype)
Purpose: Check if an element is active (visible) given an internal id.
Input: iid - Internal id.
Dtype - Data type, constant such as SHELL, SOLID, TSHELL, BEAM, SPHNODE can be used.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

Int **SCLInquiryPartTypeU**(Int uid)
Purpose: Check the type of element for a given user defined part id.
Input: uid – user defined external ID for part
Output: none
Return: element type code:
1 – BEAM, 2 – SHELL, 3 – SOLID, 4 – TSHELL
5 – NRBODY, 6 – MASS, 7 – DISCRETE, 8 – SEATBELT
9 – INERTIA, 10 – RGSURF, 11 – SPHNODE,
12 – FLUID, 13 – NURBSPATCH, 14 - PARTICLE

…….

Int **SCLInquiryPartTypeI**(Int iid)
Purpose: Check the type of element for a given internal part id.
Input: iid – internal ID for part
Output: none
Return: element type code:
1 – BEAM, 2 – SHELL, 3 – SOLID, 4 – TSHELL
5 – NRBODY, 6 – MASS, 7 – DISCRETE, 8 – SEATBELT
9 – INERTIA, 10 – RGSURF, 11 – SPHNODE,
12 – FLUID, 13 – NURBSPATCH, 14 - PARTICLE
…….

void **SCLGetModelDirectory**(char *dir)
Purpose: Get model directory.
Input: dir– the directory where model is put
Output: none
…….

Int **SCLGetDataCenterString**(char *parameter_name, Int iid, char *result)
Purpose: Get string from model data.
Input: parameter_name(like “part_name”, “time”).
iid - internal id(zero-based), not used if the parameter_name is time.
Output: result - the string to be obtained.
Return: 0 is valid, 1 invalid.
…….

Binout reader data type and structure

```
struct BINOUT_Parameter_
{
        Int id;
        Int ipt;
        Int nqt;
        Int npl;
        Int freq_mode;
        Int cid;
        Int idtype;
        Int datatype_option;
};
```

1. id: the entity id, default is 0
2. ipt: the number through thickness integration point, default is 1
3. nqt: the node id of element, for the eloutdet branch only, default is 0
4. npl: the number of in-plane integration point, default is 1
5. freq_mode: the nth order frequency, default is 1
6. cid: the contact id, default is 0
7. nodeset: the nodeset id for rwforc, and default is -1
8. rigidwall: the rigidwall id for rwforc, and default is -1
9. idtype: the type of entity id, value from BINOUT_IdType
10. datatype_option: the option value from BINOUT_DataTypeoption

```
struct _BINOUT_String
{
  chat string[64];
```

```
}
enum BINOUT_IdType
{
        /* initial value for idtype*/
        BINOUT_IDTYPE_NONE,

        /* ID type in Elout branch*/
        BINOUT_ELOUT_ID_BEAM,
        BINOUT_ELOUT_ID_SHELL,
        BINOUT_ELOUT_ID_SOLID,
        BINOUT_ELOUT_ID_TSHELL,
        /* ID type in Swforc branch*/
        BINOUT_SWFORC_ID_CONSTRAINT,
        BINOUT_SWFORC_ID_WELD,
        BINOUT_SWFORC_ID_BEAM,
        BINOUT_SWFORC_ID_SOLID,
        BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT,
        BINOUT_SWFORC_ID_SOLID_ASSEMBLY,

        /* ID type in Abstat branch*/
        BINOUT_ABSTAT_ID_AIRBAG,
        BINOUT_ABSTAT_ID_MATERIAL,

        /* ID type in Abstat_pbm branch*/
        BINOUT_ABSTAT_PBM_ID_PBLAST,
        BINOUT_ABSTAT_PBM_ID_PART,

        /* ID type in Nodfor branch*/
        BINOUT_NODFOR_ID_NODE,
        BINOUT_NODFOR_ID_GROUP,

        /* ID type in rcforc branch*/
        BINOUT_RCFORC_ID_MASTER,
        BINOUT_RCFORC_ID_SLAVE,

        /* ID type in sbtout branch*/
        BINOUT_SBTOUT_ID_BELT,
        BINOUT_SBTOUT_ID_RETRACTOR,
        BINOUT_SBTOUT_ID_SLIPRING,
```

/*ID type in bndout branch*/
BINOUT_BNDOUT_ID_DISCRETENODES,
BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES,
BINOUT_BNDOUT_ID_PRESSURE,
BINOUT_BNDOUT_ID_VELOCITYNODES,
BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES,
BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,

/*ID type in nbndout branch*/
BINOUT_NBNDOUT_ID_DISCRETENODES,
BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES,
BINOUT_NBNDOUT_ID_PRESSURE,
BINOUT_NBNDOUT_ID_VELOCITYNODES,
BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES,
BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,

/*ID type in jntforc branch*/
BINOUT_JNTFORC_ID_JOINTS,
BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL,
BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED,

/*ID type in spcforc*/
BINOUT_SPCFORC_SETID,
BINOUT_SPCFORC_ID,

/*ID type in rwforc*/
BINOUT_RWFORC_ID_FORCES,
BINOUT_RWFORC_ID_TRANSDUCER,
BINOUT_RWFORC_ID_WALL,

/*ID type in nodfor_ssd */
BINOUT_NODFOR_SSD_ID_NODE,
BINOUT_NODFOR_SSD_ID_GROUP,

/*ID type in elout_ssd*/
BINOUT_ELOUT_SSD_ID_BEAM,
BINOUT_ELOUT_SSD_ID_SOLID,
BINOUT_ELOUT_SSD_ID_TSHELL,
BINOUT_ELOUT_SSD_ID_SHELL,

```
	/*ID type in eloutdet*/
	BINOUT_ELOUTDET_ID_SOLID,
	BINOUT_ELOUTDET_ID_SHELL,
	BINOUT_ELOUTDET_ID_TSHELL,
	BINOUT_ELOUTDET_ID_NODAVG,

	/*ID type in abstat_cpm*/
	BINOUT_ABSTATCPM_ID_BAG,
	BINOUT_ABSTATCPM_ID_PART,
	BINOUT_ABSTATCPM_ID_SPECIES,
	BINOUT_ABSTATCPM_ID_CHAMBER,

	/*ID type in elout_psd*/
	BINOUT_ELOUT_PSD_ID_BEAM,
	BINOUT_ELOUT_PSD_ID_SOLID,
	BINOUT_ELOUT_PSD_ID_TSHELL,
	BINOUT_ELOUT_PSD_ID_SHELL,

	/*ID type in elout_spcm*/
	BINOUT_ELOUT_SPCM_ID_BEAM,
	BINOUT_ELOUT_SPCM_ID_SOLID,
	BINOUT_ELOUT_SPCM_ID_TSHELL,
	BINOUT_ELOUT_SPCM_ID_SHELL,
};
enum BINOUT_DataTypeOption
{
	/* initial value for option*/
	BINOUT_DATATYPE_GENERAL,

	/* values for nodout_ssd,nodfor_ssd,elout_ssd files */
	BINOUT_DATATYPE_AMPLITUDE,
	BINOUT_DATATYPE_PHASEANGLE,
	BINOUT_DATATYPE_REAL,
	BINOUT_DATATYPE_IMAGINARY,
	BINOUT_DATATYPE_MODALCONTRIBUTION,

	/*eloutdet ipt or nqt*/
	BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS,
	BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS,
```

```
    /*elout lower or upper*/
    BINOUT_DATATYPE_ELOUT_LOWER,
    BINOUT_DATATYPE_ELOUT_UPPER,
};
```

Binout reader related Functions

…..

char * **SCLBinoutOpen**(char * filename)

purpose: Open a binout file.
Input: filename – file full name.
Output: none
Return: file handle.

…..

void **SCLBinoutClose**(char * handle)

purpose: Close the binout file.
Input: handle – file handle.
Output: none
Return: void.

…..

void **SCLBinoutInit**(BINOUT_Parameter * pBinoutParameter)

purpose: Initialize the binout parameter.
Input: pBinoutParameter – Advanced option settings are in binout parameter.
Output: none
Return: void.

…..

Int **SCLBinoutReadInt**(char * handle, Int type, Int *value, _BINOUT_Parameter *param)

purpose: Get integer type data from binout file.
Input: handle – file handle.
type – BINOUT_Datatype enumeration. See the “Binout_Datatype Enumeration List” in below.

param – Adcanved options for getting binout data.
Output: value – int type
Return: Int. 0 error, 1 correct.

….....

Int **SCLBinoutReadStringArray**(char * handle, Int type, _BINOUT_String ** value, _BINOUT_Parameter *param)

purpose: Get string type data from binout file.
Input: handle – file handle.
type – BINOUT_Datatype enumeration. See the “Binout_Datatype Enumeration List” in below.
param – Adcanved options for getting binout data.
Output: value – _BINOUT_String array.
Return: Int. 0 error, 1 correct.

….....

Int **SCLBinoutReadFloatArray**(char * handle, Int type, Float **value, _BINOUT_Parameter *param)

purpose: Get float array type data from binout file.
Input: handle – file handle.
type – BINOUT_Datatype enumeration. See the “Binout_Datatype Enumeration List” in below.
param – Adcanved options for getting binout data.
Output: value – Float array.
Return: Int. 0 error, 1 correct.

….....

Int **SCLBinoutReadIntArray**(char * handle, Int type, Int **value, _BINOUT_Parameter *param)

purpose: Get int array type data from binout file.
Input: handle – file handle.
type – BINOUT_Datatype enumeration. See the “Binout_Datatype Enumeration List” in below.
param – Adcanved options for getting binout data.
Output: value – Int array.
Return: Int. 0 error, 1 correct.

….....

Binout_Datatype Enumeration List:

BINOUT_NUM_BRANCH	int	1	ignore
BINOUT_BRANCHES	BinoutStringArray	BINOUT_NUM_BRANCH	ignore
BINOUT_ABSTAT_NUM_TIMESTEP	int	1	ignore
BINOUT_ABSTAT_X	double	BINOUT_ABSTAT_NUM_TIMESTEP	ignore
BINOUT_ABSTAT_NUM_ID	int	1	ignore
BINOUT_ABSTAT_IDS	unsigned int	BINOUT_ABSTAT_NUM_ID	ignore
BINOUT_ABSTAT_NUM_COMPONENT	int	1	ignore
BINOUT_ABSTAT_COMPONENTS	BinoutStringArray	BINOUT_ABSTAT_NUM_COMPONENT	ignore
BINOUT_ABSTAT_NUM_MATID	int	1	ignore
BINOUT_ABSTAT_MAT_IDS	unsigned int	BINOUT_ABSTAT_NUM_MATID	ignore

BINOUT_ABSTAT_AREA_BLOCKED	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_AREA_UNBLOCKED	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_LEAKAGE	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DENSITY	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_DT_IN	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_DT_OUT	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_DT_OUTP	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_DT_OUTV	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_IN	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL

BINOUT_ABSTAT_DM_OUT	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_OUTP	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_DM_OUTV	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_GAS_TEMP	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_INTERNAL_ENERGY	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_PRESSURE	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_REACTION	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_AREA_SURFACE	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_TOTAL_MASS	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL

BINOUT_ABSTAT_VOLUME	double	BINOUT_ABSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_ABSTAT_PBM_NUM_TIMESTEP	int	1	ignore
BINOUT_ABSTAT_PBM_X	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	ignore
BINOUT_ABSTAT_PBM_NUM_ID	int	1	ignore
BINOUT_ABSTAT_PBM_IDS	unsigned int	BINOUT_ABSTAT_PBM_NUM_ID	ignore
BINOUT_ABSTAT_PBM_NUM_COMPONENT	int	1	ignore
BINOUT_ABSTAT_PBM_COMPONENTS	BinoutStringArray	BINOUT_ABSTAT_PBM_NUM_COMPONENT	ignore
BINOUT_ABSTAT_PBM_NUM_PARTID	int	1	ignore
BINOUT_ABSTAT_PBM_PART_IDS	unsigned int	BINOUT_ABSTAT_PBM_NUM_PARTID	ignore
BINOUT_ABSTAT_PBM_AIR_INTER_E	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_AIR_TRA	double	BINOUT_ABSTAT_P	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or

NS_E		BM_NUM_TIMESTEP	BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_DETONATION_PRODUCT_INTER_E	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_DETONATION_PRODUCT_TRANS_E	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_OUTSIDE_DOMAIN_INTER_E	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_OUTSIDE_DOMAIN_TRANS_E	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_PRESSURE_AIR	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_PRESSURE_DET_PRODUCTS	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_PRESSURE_RESULTANT	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_SURFACE_AREA	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_X_FORCE	double	BINOUT_ABSTAT_P	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or

_AIR		BM_NUM_TIMESTEP	BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_X_FORCE_DET_PRODUCTS	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_X_FORCE_RESULTANT	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Y_FORCE_AIR	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Y_FORCE_DET_PRODUCTS	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Y_FORCE_RESULTANT	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Z_FORCE_AIR	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Z_FORCE_DET_PRODUCTS	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTAT_PBM_Z_FORCE_RESULTANT	double	BINOUT_ABSTAT_PBM_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_PBM_ID_PBLAST or BINOUT_ABSTAT_PBM_ID_PART
BINOUT_ABSTATCPM_NUM_TIME	int	1	ignore

STEP			
BINOUT_ABSTATCPM_X	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	ignore
BINOUT_ABSTATCPM_NUM_ID	int	1	idtype
BINOUT_ABSTATCPM_IDS	unsigned int	BINOUT_ABSTATCPM_NUM_ID	idtype
BINOUT_ABSTATCPM_NUM_COMPONENT	int	1	idtype
BINOUT_ABSTATCPM_COMPONENTS	BinoutStringArray	BINOUT_ABSTATCPM_NUM_COMPONENT	idtype
BINOUT_ABSTATCPM_VOLUME	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_PRESSURE	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_INTERNAL_ENERGY	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_DM_DT_IN	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_DENSITY	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER

BINOUT_ABSTATCPM_DM_DT_OUT	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_TOTAL_MASS	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_GAS_TEMP	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_SURFACE_AREA	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_REACTION	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_INFLACTOR_E	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_TRANS_KE	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_BAG, BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_ABSTATCPM_POR_LEAK	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_VENT_LEAK	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_AREA_TOTAL	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_AREA_UNBLOCKED	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART

BINOUT_ABSTATCPM_TEMPERATURE	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_PRESP	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_PRESM	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_PART
BINOUT_ABSTATCPM_NT_SPECIES	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_SPECIES
BINOUT_ABSTATCPM_TRANSE	double	BINOUT_ABSTATCPM_NUM_TIMESTEP	idtype = BINOUT_ABSTATCPM_ID_CHAMBER
BINOUT_CPMSENSOR_NUM_TIMESTEP	int	1	ignore
BINOUT_CPMSENSOR_X	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_NUM_ID	int	1	ignore
BINOUT_CPMSENSOR_IDS	unsigned int	BINOUT_CPMSENSOR_NUM_ID	ignore
BINOUT_CPMSENSOR_NUM_COMPONENT	int	1	ignore
BINOUT_CPMSENSOR_COMPONENTS	BinoutStringAr	BINOUT_CPMSENSOR_NUM_COMPONENT	ignore

	ray		
BINOUT_CPMSENSOR_AVE_VELX	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_AVE_VELY	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_AVE_VELZ	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_AVE_VELR	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_TEMP	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_RHO	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_PRESSURE	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_SENSOR_X	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_SENSOR_Y	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_CPMSENSOR_SENSOR_Z	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore

BINOUT_CPMSENSOR_NPART	double	BINOUT_CPMSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_NUM_TIMESTEP	int	1	ignore
BINOUT_PGSENSOR_X	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_NUM_ID	int	1	ignore
BINOUT_PGSENSOR_IDS	unsigned int	BINOUT_PGSENSOR_NUM_ID	ignore
BINOUT_PGSENSOR_NUM_COMPONENT	int	1	ignore
BINOUT_PGSENSOR_COMPONENTS	BinoutStringArray	BINOUT_PGSENSOR_NUM_COMPONENT	ignore
BINOUT_PGSENSOR_AVE_VELX	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_AVE_VELY	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_AVE_VELZ	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_AVE_VELR	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore

BINOUT_PGSENSOR_TEMP	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_RHO	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_PRESSURE	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_SENSOR_X	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_SENSOR_Y	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_SENSOR_Z	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSENSOR_NPART	double	BINOUT_PGSENSOR_NUM_TIMESTEP	ignore
BINOUT_PGSTAT_NUM_TIMESTEP	int	1	ignore
BINOUT_PGSTAT_X	double	BINOUT_PGSTAT_NUM_TIMESTEP	ignore
BINOUT_PGSTAT_NUM_BAG_ID	int	1	ignore
BINOUT_PGSTAT_BAG_IDS	unsigned int	BINOUT_PGSTAT_NUM_BAG_ID	ignore

BINOUT_PGSTAT_NUM_PART_ID	int	1	ignore
BINOUT_PGSTAT_PART_IDS	unsigned int	BINOUT_PGSTAT_NUM_PART_ID	ignore
BINOUT_PGSTAT_NUM_CHAMBER_ID	double	BINOUT_PGSTAT_NUM_TIMESTEP	ignore
BINOUT_PGSTAT_CHAMBER_IDS	unsigned int	BINOUT_PGSTAT_NUM_CHAMBER_ID	ignore
BINOUT_PGSTAT_NUM_BAG_COMPONENT	double	BINOUT_PGSTAT_NUM_TIMESTEP	id, idtype: BINOUT_ABSTAT_ID_AIRBAG or BINOUT_ABSTAT_ID_MATERIAL
BINOUT_PGSTAT_BAG_COMPONENTS	BinoutStringArray	BINOUT_PGSTAT_NUM_BAG_COMPONENT	ignore
BINOUT_PGSTAT_NUM_PART_COMPONENT	int	1	ignore
BINOUT_PGSTAT_PART_COMPONENTS	BinoutStringArray	BINOUT_PGSTAT_NUM_PART_COMPONENT	ignore
BINOUT_PGSTAT_NUM_CHAMBER_COMPONENT	int	1	ignore
BINOUT_PGSTAT_CHAMBER_COMPONENTS	BinoutStringArray	BINOUT_PGSTAT_NUM_CHAMBER_COMPONENT	ignore

BINOUT_PGSTAT_PART_PRESSURE	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_POR_LEAK	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_VENT_LEAK	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_AREA_TOT	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_AREA_UNBLOCKED	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_TEMPERATURE	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_PRES_PLUS	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_PART_PRES_MINUS	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_VOLUME	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_PRESSURE	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_INTERNA	double	BINOUT_PGSTAT_N	id

L_ENERGY		UM_TIMESTEP	
BINOUT_PGSTAT_BAG_DM_DT_IN	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_DENSITY	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_DM_DT_OUT	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_TOTAL_MASS	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_GAS_TEMP	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_SURFACE_AREA	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_BAG_REACTION	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_VOLUME	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_PRESSURE	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_INTERNAL_ENERGY	double	BINOUT_PGSTAT_NUM_TIMESTEP	id

BINOUT_PGSTAT_CHAMBER_DM_DT_IN	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_DENSITY	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_DM_DT_OUT	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_TOTAL_MASS	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_GAS_TEMP	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_SURFACE_AREA	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_REACTION	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_PGSTAT_CHAMBER_TRANSE	double	BINOUT_PGSTAT_NUM_TIMESTEP	id
BINOUT_DISBOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_DISBOUT_X	double	BINOUT_DISBOUT_NUM_TIMESTEP	ignore
BINOUT_DISBOUT_NUM_ID	int	1	ignore

BINOUT_DISBOUT_IDS	unsigned int	BINOUT_DISBOUT_NUM_ID	ignore
BINOUT_DISBOUT_NUM_COMPONENT	int	1	ignore
BINOUT_DISBOUT_COMPONENTS	BinoutStringArray	BINOUT_DISBOUT_NUM_COMPONENT	ignore
BINOUT_DISBOUT_RELATIVE_DISPLACEMENT_AXIS	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_RELATIVE_DISPLACEMENT_S	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_RELATIVE_DISPLACEMENT_T	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_RELATIVE_ROTATION_AXIS	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_RELATIVE_ROTATION_S	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_RELATIVE_ROTATION_T	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_FORCE_AXIS	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_FORCE_S	double	BINOUT_DISBOUT_NUM_TIMESTEP	id

BINOUT_DISBOUT_FORCE_T	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_MOMENET_AXIS	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_MOMENET_S	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_MOMENET_T	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_AXIS_X	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_AXIS_Y	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_AXIS_Z	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_S_X	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_S_Y	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_S_Z	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_	double	BINOUT_DISBOUT_	id

T_X		NUM_TIMESTEP	
BINOUT_DISBOUT_DIRECTION_T_Y	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DISBOUT_DIRECTION_T_Z	double	BINOUT_DISBOUT_NUM_TIMESTEP	id
BINOUT_DEMFLOW_NUM_TIMESTEP	int	1	ignore
BINOUT_DEMFLOW_X	double	BINOUT_DEMFLOW_NUM_TIMESTEP	ignore
BINOUT_DEMFLOW_NUM_ID	int	1	ignore
BINOUT_DEMFLOW_IDS	unsigned int	BINOUT_DEMFLOW_NUM_ID	ignore
BINOUT_DEMFLOW_NUM_COMPONENT	int	1	ignore
BINOUT_DEMFLOW_COMPONENTS	BinoutStringArray	BINOUT_DEMFLOW_NUM_COMPONENT	ignore
BINOUT_DEMFLOW_MFLOW_PLUS	double	BINOUT_DEMFLOW_NUM_TIMESTEP	id, idtype
BINOUT_DEMFLOW_MFLOW_MINUS	double	BINOUT_DEMFLOW_NUM_TIMESTEP	id, idtype

BINOUT_DEMFLOW_MFLOW_RESULTANT	double	BINOUT_DEMFLOW_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_NUM_TIMESTEP	int	1	ignore
BINOUT_DEMTRH_X	double	BINOUT_DEMTRH_NUM_TIMESTEP	ignore
BINOUT_DEMTRH_NUM_ID	int	1	ignore
BINOUT_DEMTRH_IDS	unsigned int	BINOUT_DEMTRH_NUM_ID	ignore
BINOUT_DEMTRH_NUM_COMPONENT	int	1	ignore
BINOUT_DEMTRH_COMPONENTS	BinoutStringArray	BINOUT_DEMTRH_NUM_COMPONENT	ignore
BINOUT_DEMTRH_POSITION_X	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_POSITION_Y	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_POSITION_Z	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_VELOCITY_X	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype

BINOUT_DEMTRH_VELOCITY_Y	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_VELOCITY_Z	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_X	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_Y	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_Z	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_XY	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_YZ	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_STRESS_ZX	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_POROSITY	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_VOID_RATIO	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_DEMTRH_COORD_NUMBE	double	BINOUT_DEMTRH_N	id, idtype

R		UM_TIMESTEP	
BINOUT_DEMTRH_PRESSURE	double	BINOUT_DEMTRH_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	int	1	ignore
BINOUT_PBLAST_SENSOR_X	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	ignore
BINOUT_PBLAST_SENSOR_NUM_ID	int	1	ignore
BINOUT_PBLAST_SENSOR_IDS	unsigned int	BINOUT_PBLAST_SENSOR_NUM_ID	ignore
BINOUT_PBLAST_SENSOR_NUM_COMPONENT	int	1	ignore
BINOUT_PBLAST_SENSOR_COMPONENTS	BinoutStringArray	BINOUT_PBLAST_SENSOR_NUM_COMPONENT	ignore
BINOUT_PBLAST_SENSOR_COUNTS	int	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_COORD_X	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_COOR		BINOUT_PBLAST_S	

D_Y	double	ENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_COORD_Z	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_TEMPERATURE	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_DENSITY	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PBLAST_SENSOR_PRESSURE	double	BINOUT_PBLAST_SENSOR_NUM_TIMESTEP	id, idtype
BINOUT_PLLYOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_PLLYOUT_X	double	BINOUT_PLLYOUT_NUM_TIMESTEP	ignore
BINOUT_PLLYOUT_NUM_ID	int	1	ignore
BINOUT_PLLYOUT_IDS	unsigned int	BINOUT_PLLYOUT_NUM_ID	ignore
BINOUT_PLLYOUT_NUM_COMPONENT	int	1	ignore
	BinoutS	BINOUT_PLLYOUT_	

BINOUT_PLLYOUT_COMPONENTS	tringArray	NUM_COMPONENT	ignore
BINOUT_PLLYOUT_SLIP	double	BINOUT_PLLYOUT_NUM_TIMESTEP	id
BINOUT_PLLYOUT_SLIP_RATE	double	BINOUT_PLLYOUT_NUM_TIMESTEP	id
BINOUT_PLLYOUT_RESULTANT_FORCE	double	BINOUT_PLLYOUT_NUM_TIMESTEP	id
BINOUT_PLLYOUT_WRAP_ANGLE	double	BINOUT_PLLYOUT_NUM_TIMESTEP	id
BINOUT_SPHFLOW_NUM_TIMESTEP	int	1	ignore
BINOUT_SPHFLOW_X	double	BINOUT_SPHFLOW_NUM_TIMESTEP	ignore
BINOUT_SPHFLOW_NUM_ID	int	1	ignore
BINOUT_SPHFLOW_IDS	unsigned int	BINOUT_SPHFLOW_NUM_ID	ignore
BINOUT_SPHFLOW_NUM_COMPONENT	int	1	ignore
BINOUT_SPHFLOW_COMPONENTS	BinoutStringArray	BINOUT_SPHFLOW_NUM_COMPONENT	ignore

BINOUT_SPHFLOW_MFLOW_PLUS	double	BINOUT_SPHFLOW_NUM_TIMESTEP	id
BINOUT_SPHFLOW_MFLOW_MINUS	double	BINOUT_SPHFLOW_NUM_TIMESTEP	id
BINOUT_SPHFLOW_MFLOW_RESULTANT	double	BINOUT_SPHFLOW_NUM_TIMESTEP	id
BINOUT_SPHOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_SPHOUT_X	double	BINOUT_SPHOUT_NUM_TIMESTEP	ignore
BINOUT_SPHOUT_NUM_ID	int	1	ignore
BINOUT_SPHOUT_IDS	unsigned int	BINOUT_SPHOUT_NUM_ID	ignore
BINOUT_SPHOUT_NUM_COMPONENT	int	1	ignore
BINOUT_SPHOUT_COMPONENTS	BinoutStringArray	BINOUT_SPHOUT_NUM_COMPONENT	ignore
BINOUT_SPHOUT_STRESS_X	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRESS_Y	double	BINOUT_SPHOUT_N	id

		UM_TIMESTEP	
BINOUT_SPHOUT_STRESS_Z	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRESS_XY	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRESS_YZ	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRESS_ZX	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_X	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_Y	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_Z	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_XY	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_YZ	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_STRAIN_ZX	double	BINOUT_SPHOUT_NUM_TIMESTEP	id

BINOUT_SPHOUT_DENSITY	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_RADIUS_OF_INFLUNCE	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_YIELD	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_EFFECTIVE_STRESS	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_TEMPERATURE	double	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_NUMBER_OF_NEIGHBORS	int	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_SPHOUT_ACT	int	BINOUT_SPHOUT_NUM_TIMESTEP	id
BINOUT_TRALEH_NUM_TIMESTEP	int	1	ignore
BINOUT_TRALEH_X	double	BINOUT_TRALEH_NUM_TIMESTEP	ignore
BINOUT_TRALEH_NUM_ID	int	1	ignore
BINOUT_TRALEH_IDS	unsigned int	BINOUT_TRALEH_NUM_ID	ignore

BINOUT_TRALEH_NUM_COMPONENT	int	1	ignore
BINOUT_TRALEH_COMPONENTS	BinoutStringArray	BINOUT_TRALEH_NUM_COMPONENT	ignore
BINOUT_TRALEH_POSITION_X	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_POSITION_Y	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_POSITION_Z	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_VELOCITY_X	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_VELOCITY_Y	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_VELOCITY_Z	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_STRESS_X	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_STRESS_Y	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_STRESS_Z	double	BINOUT_TRALEH_NUM_TIMESTEP	id

BINOUT_TRALEH_STRESS_XY	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_STRESS_YZ	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_STRESS_ZX	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_EFFECTIVE_PLASTIC_STRAIN	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_DENSITY	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_VOLUME_FRACTION	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_TRALEH_HISTORY_VAR	double	BINOUT_TRALEH_NUM_TIMESTEP	id
BINOUT_NODFOR_NUM_TIMESTEP	int	1	ignore
BINOUT_NODFOR_X	double	BINOUT_NODFOR_NUM_TIMESTEP	ignore
BINOUT_NODFOR_NUM_ID	int	1	ignore
BINOUT_NODFOR_IDS	unsigned int	BINOUT_NODFOR_NUM_ID	ignore

BINOUT_NODFOR_NUM_GROUPID	int	1	ignore
BINOUT_NODFOR_GROUP_IDS	unsigned int	BINOUT_NODFOR_NUM_GROUPID	ignore
BINOUT_NODFOR_NUM_COMPONENT	int	1	ignore
BINOUT_NODFOR_COMPONENTS	BinoutStringArray	BINOUT_NODFOR_NUM_COMPONENT	ignore
BINOUT_NODFOR_ENERGY	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype=BINOUT_NODFOR_ID_NODE
BINOUT_NODFOR_FORCE_X	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype=BINOUT_NODFOR_ID_NODE
BINOUT_NODFOR_FORCE_Y	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype=BINOUT_NODFOR_ID_NODE
BINOUT_NODFOR_FORCE_Z	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype=BINOUT_NODFOR_ID_NODE
BINOUT_NODFOR_TOTAL_ENERGY	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODFOR_TOTAL_FORCE_X	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODFOR_TOTAL_FORCE	double	BINOUT_NODFOR_N	id, idtype= BINOUT_NODFOR_ID_GROUP

_Y		UM_TIMESTEP	
BINOUT_NODFOR_TOTAL_FORCE_Z	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODFOR_LOCAL_FORCE_X	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODFOR_LOCAL_FORCE_Y	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODFOR_LOCAL_FORCE_Z	double	BINOUT_NODFOR_NUM_TIMESTEP	id, idtype= BINOUT_NODFOR_ID_GROUP
BINOUT_NODOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_NODOUT_X	double	BINOUT_NODOUT_NUM_TIMESTEP	ignore
BINOUT_NODOUT_NUM_ID	int	1	ignore
BINOUT_NODOUT_IDS	unsigned int	BINOUT_NODOUT_NUM_ID	ignore
BINOUT_NODOUT_NUM_COMPONENT	int	1	ignore
BINOUT_NODOUT_COMPONENTS	BinoutStringArray	BINOUT_NODOUT_NUM_COMPONENT	ignore

BINOUT_NODOUT_ACCELERATION_RX	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_DISPLACEMENT_RX	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_RX	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_ACCELERATION_RY	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_DISPLACEMENT_RY	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_RY	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_ACCELERATION_RZ	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_DISPLACEMENT_RZ	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_RZ	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_ACCELERATION_X	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_COORDINATE_X	double	BINOUT_NODOUT_NUM_TIMESTEP	id

BINOUT_NODOUT_DISPLACEMENT_X	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_X	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_ACCELERATION_Y	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_COORDINATE_Y	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_DISPLACEMENT_Y	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_Y	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_ACCELERATION_Z	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_COORDINATE_Z	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_DISPLACEMENT_Z	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUT_VELOCITY_Z	double	BINOUT_NODOUT_NUM_TIMESTEP	id
BINOUT_NODOUTHF_NUM_TIMES	int	1	ignore

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BINOUT_NODOUTHF_X	double	BINOUT_NODOUTHF_NUM_TIMESTEP	ignore
BINOUT_NODOUTHF_NUM_ID	int	1	ignore
BINOUT_NODOUTHF_IDS	unsigned int	BINOUT_NODOUTHF_NUM_ID	ignore
BINOUT_NODOUTHF_NUM_COMPONENT	int	1	ignore
BINOUT_NODOUTHF_COMPONENTS	BinoutStringArray	BINOUT_NODOUTHF_NUM_COMPONENT	ignore
BINOUT_NODOUTHF_ACCELERATION_RX	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_RX	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_VELOCITY_RX	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_ACCELERATION_RY	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_RY	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id

BINOUT_NODOUTHF_VELOCITY_RY	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_ACCELERATION_RZ	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_RZ	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_VELOCITY_RZ	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_ACCELERATION_X	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_COORDINATE_X	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_X	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_VELOCITY_X	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_ACCELERATION_Y	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_COORDINATE_Y	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_Y	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id

BINOUT_NODOUTHF_VELOCITY_Y	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_ACCELERATION_Z	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_COORDINATE_Z	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_DISPLACEMENT_Z	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_NODOUTHF_VELOCITY_Z	double	BINOUT_NODOUTHF_NUM_TIMESTEP	id
BINOUT_ELOUT_NUM_TIMESTEP	int	1	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_X	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_NUM_ID	int	1	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_IDS	unsigned int	BINOUT_ELOUT_NUM_ID	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,

BINOUT_ELOUT_NUM_COMPONENT	int	1	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_COMPONENTS	BinoutStringArray	BINOUT_ELOUT_NUM_COMPONENT	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_NUM_IPT	int	1	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_IPTS	unsigned int	BINOUT_ELOUT_NUM_IPT	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_NUM_NPL	int	1	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_NPLS	unsigned int	BINOUT_ELOUT_NUM_NPL	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,
BINOUT_ELOUT_STRESS_XX	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
		BINOUT_ELOUT_NU	idtype =

BINOUT_ELOUT_STRESS_YY	double	M_TIMESTEP	BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRESS_ZZ	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRESS_XY	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRESS_YZ	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRESS_ZX	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_YIELD	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_EFFSG	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl

BINOUT_ELOUT_PLASTIC_STRAIN	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_XX	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_YY	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_ZZ	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_XY	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_YZ	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_STRAIN_ZX	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or

			BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_AXIAL	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_SHEAR_S	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_SHEAR_T	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_MOMENT_S	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_MOMENT_T	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_TORSION	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl

BINOUT_ELOUT_COEF_LENGTH	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_VISC_FORCE	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_SIGMA_11	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_SIGMA_12	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_SIGMA_31	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_PLASTIC_EPS	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt, npl
BINOUT_ELOUT_HISTORY_VAR	double	BINOUT_ELOUT_NUM_TIMESTEP	idtype = BINOUT_ELOUT_ID_BEAM,BINOUT_ELOUT_ID_SHELL,BINOUT_ELOUT_ID_SOLID or BINOUT_ELOUT_ID_TSHELL,id, ipt,

			npl
BINOUT_SSSTAT_NUM_TIMESTEP	int	1	ignore
BINOUT_SSSTAT_X	double	BINOUT_SSSTAT_NUM_TIMESTEP	ignore
BINOUT_SSSTAT_NUM_SYSTEMS	int	1	ignore
BINOUT_SSSTAT_SYSTEM_IDS	unsigned int	BINOUT_SSSTAT_NUM_SYSTEMS	ignore
BINOUT_SSSTAT_NUM_COMPONENT	int	1	ignore
BINOUT_SSSTAT_COMPONENTS	BinoutStringArray	BINOUT_SSSTAT_NUM_COMPONENT	ignore
BINOUT_SSSTAT_TIME_STEP	double	BINOUT_SSSTAT_NUM_TIMESTEP	ignore
BINOUT_SSSTAT_KIN_ENERGY_G	double	BINOUT_SSSTAT_NUM_TIMESTEP	ignore
BINOUT_SSSTAT_INT_ENERGY_G	double	BINOUT_SSSTAT_NUM_TIMESTEP	ignore
BINOUT_SSSTAT_HGL_ENERGY_G	double	BINOUT_SSSTAT_NUM_TIMESTEP	ignore

BINOUT_SSSTAT_KINETIC_ENERGY	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INTERNAL_ENERGY	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_HOURGLASS_ENERGY	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_MOMENTUM_X	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_MOMENTUM_Y	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_MOMENTUM_Z	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_KINETIC_ENERGY_RATIOS	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INTERNAL_ENERGY_RATIOS	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_TOTALMASS_SUBSYSTEM	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_MASSCENTER_COORDINATE_X	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_MASSCENTER_COORDINATE_Y	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid

BINOUT_SSSTAT_MASSCENTER_COORDINATE_Z	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_XX	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_XY	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_XZ	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_YY	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_YZ	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_INERTIA_TENSOR_ZZ	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_1ST	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_2ND	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_3RD	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_I	double	BINOUT_SSSTAT_N	systemid

NERTIAS_1ST_DIRECTIONS_X		UM_TIMESTEP	
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_1ST_DIRECTIONS_Y	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_1ST_DIRECTIONS_Z	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_2ND_DIRECTIONS_X	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_2ND_DIRECTIONS_Y	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_2ND_DIRECTIONS_Z	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_3RD_DIRECTIONS_X	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_3RD_DIRECTIONS_Y	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_SSSTAT_PRINCIPAL_INERTIAS_3RD_DIRECTIONS_Z	double	BINOUT_SSSTAT_NUM_TIMESTEP	systemid
BINOUT_GLSTAT_NUM_TIMESTEP	int	1	ignore
BINOUT_GLSTAT_X	double	BINOUT_GLSTAT_NUM_TIMESTEP	ignore

BINOUT_GLSTAT_NUM_COMPONENT	int	1	ignore
BINOUT_GLSTAT_COMPONENTS	BinoutStringArray	BINOUT_GLSTAT_NUM_COMPONENT	ignore
BINOUT_GLSTAT_NUMBER_OF_NODES	int	BINOUT_GLSTAT_NUM_TIMESTEP	ignore
BINOUT_GLSTAT_NUMBER_OF_ELEMENTS	int	BINOUT_GLSTAT_NUM_TIMESTEP	ignore
BINOUT_GLSTAT_NZC	int	BINOUT_GLSTAT_NUM_TIMESTEP	ignore
BINOUT_GLSTAT_NUMBER_OF_STONEWALL	int	BINOUT_GLSTAT_NUM_TIMESTEP	ignore
BINOUT_GLSTAT_STONEWALL_IDS	unsigned int	BINOUT_GLSTAT_NUMBER_OF_STONEWALL	ignore
BINOUT_GLSTAT_TIME_STEP	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_KINETIC_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_INTERNAL_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_RB_STOPPER_	double	BINOUT_GLSTAT_T	ignore

ENERGY		IME_STEP	
BINOUT_GLSTAT_SPRING_AND_DAMPER_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_JOINT_INTERNAL_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_HOURGLASS_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_SYSTEM_DAMPING_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_SLIDING_INTERFACE_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_EXTERNAL_WORK	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_ERODED_KINETIC_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_ERODED_INTERNAL_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_ERODED_HOURGLASS_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_TOTAL_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore

BINOUT_GLSTAT_ENERGY_RATIO	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_ENERGY_RATIO_WO_ERODED	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_GLOBAL_VELOCITY_X	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_GLOBAL_VELOCITY_Y	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_GLOBAL_VELOCITY_Z	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_ADDED_MASS	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_PERCENT_INCREASE	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_TOTAL_MASS	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_MASS_CENTER_X	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_MASS_CENTER_Y	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_GLSTAT_MASS_CENTER_Z	double	BINOUT_GLSTAT_TIME_STEP	ignore

BINOUT_GLSTAT_STONEWALL_ENERGY	double	BINOUT_GLSTAT_TIME_STEP	ignore
BINOUT_DEFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_DEFORC_X	double	BINOUT_DEFORC_NUM_TIMESTEP	ignore
BINOUT_DEFORC_NUM_TRANSLATION_ID	int	1	ignore
BINOUT_DEFORC_TRANSLATION_IDS	unsigned int	BINOUT_DEFORC_NUM_TRANSLATION_ID	ignore
BINOUT_DEFORC_NUM_ROTATION_ID	int	1	ignore
BINOUT_DEFORC_ROTATION_IDS	unsigned int	BINOUT_DEFORC_NUM_ROTATION_ID	ignore
BINOUT_DEFORC_NUM_COMPONENT	int	1	ignore
BINOUT_DEFORC_COMPONENTS	BinoutStringArray	BINOUT_DEFORC_NUM_COMPONENT	ignore
BINOUT_DEFORC_DISPLACEMENT	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number

BINOUT_DEFORC_RESULTANT_FORCE	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_FORCE_X	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_FORCE_Y	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_FORCE_Z	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_RELATIVE_ROTATION	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_RESULTANT_MOMENT	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_MOMENT_X	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_MOMENT_Y	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_DEFORC_MOMENT_Z	double	BINOUT_DEFORC_NUM_TIMESTEP	id = spring/damper number
BINOUT_MATSUM_NUM_TIMESTEP	int	1	ignore
BINOUT_MATSUM_X	double	BINOUT_MATSUM_NUM_TIMESTEP	ignore

BINOUT_MATSUM_NUM_ID	int	1	ignore
BINOUT_MATSUM_IDS	unsigned int	BINOUT_MATSUM_NUM_ID	ignore
BINOUT_MATSUM_NUM_COMPONENT	int	1	ignore
BINOUT_MATSUM_COMPONENTS	BinoutStringArray	BINOUT_MATSUM_NUM_COMPONENT	ignore
BINOUT_MATSUM_INTERNAL_ENERGY	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_KINETIC_ENERGY	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_ERODED_INTERNAL_ENERGY	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_ERODED_KINETIC_ENERGY	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_MASS	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_HOURGLASS_ENERGY	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_MOMENTUM_X	double	BINOUT_MATSUM_N	id

		UM_TIMESTEP	
BINOUT_MATSUM_MOMENTUM_Y	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_MOMENTUM_Z	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_RBVELOCITY_X	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_RBVELOCITY_Y	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_MATSUM_RBVELOCITY_Z	double	BINOUT_MATSUM_NUM_TIMESTEP	id
BINOUT_TRHIST_NUM_TIMESTEP	int	1	ignore
BINOUT_TRHIST_X	double	BINOUT_TRHIST_NUM_TIMESTEP	ignore
BINOUT_TRHIST_NUM_ID	int	1	ignore
BINOUT_TRHIST_IDS	unsigned int	BINOUT_TRHIST_NUM_ID	ignore
BINOUT_TRHIST_NUM_COMPONENT	int	1	ignore
BINOUT_TRHIST_COMPONENTS	BinoutS	BINOUT_TRHIST_N	ignore

	tringArray	UM_COMPONENT	
BINOUT_TRHIST_ELEMENT_ID	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_COORDINATE_X	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_COORDINATE_Y	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_COORDINATE_Z	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_VELOCITY_X	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_VELOCITY_Y	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_VELOCITY_Z	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_STRESS_X	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_STRESS_Y	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_STRESS_Z	double	BINOUT_TRHIST_NUM_TIMESTEP	id

BINOUT_TRHIST_STRESS_XY	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_STRESS_YZ	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_STRESS_ZX	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_EFFECTIVE_PLASTIC_STRAIN	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_REL_VOL	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_RHO	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TRHIST_PRESSURE	double	BINOUT_TRHIST_NUM_TIMESTEP	id
BINOUT_TPRINT_NUM_TIMESTEP	int	1	ignore
BINOUT_TPRINT_X	double	BINOUT_TPRINT_NUM_TIMESTEP	ignore
BINOUT_TPRINT_NUM_NODE_ID	int	1	ignore
BINOUT_TPRINT_NUM_PART_ID	int	1	ignore

BINOUT_TPRINT_NODE_IDS	unsigned int	BINOUT_TPRINT_NUM_ID	ignore
BINOUT_TPRINT_PART_IDS	unsigned int	BINOUT_TPRINT_NUM_ID	ignore
BINOUT_TPRINT_NUM_NODE_COMPONENT	int	1	ignore
BINOUT_TPRINT_NUM_PART_COMPONENT	int	1	ignore
BINOUT_TPRINT_NODE_COMPONENTS	BinoutStringArray	BINOUT_TPRINT_NUM_NODE_COMPONENT	ignore
BINOUT_TPRINT_PART_COMPONENTS	BinoutStringArray	BINOUT_TPRINT_NUM_PART_COMPONENT	ignore
BINOUT_TPRINT_TEMPERATURE	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_FLUX_X	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_FLUX_Y	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_FLUX_Z	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_T_TOP	double	BINOUT_TPRINT_N	id

		UM_TIMESTEP	
BINOUT_TPRINT_T_BOTTOM	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_AVERAGE_PART_TEMPERATURE	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_ENERGY_CHANGE	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_HEAT_GENERATED	double	BINOUT_TPRINT_NUM_TIMESTEP	id
BINOUT_TPRINT_TMIN	double	1	state number
BINOUT_TPRINT_TMAX	double	1	state number
BINOUT_TPRINT_TNORM	double	1	state number
BINOUT_NCFORC_NUM_INTERFACE	int	1	ignore
BINOUT_NCFORC_INTERFACES	BinoutStringArray	BINOUT_NCFORC_NUM_INTERFACE	ignore
BINOUT_NCFORC_NUM_ID	int	1	cid = contact id
BINOUT_NCFORC_IDS	unsigned int	BINOUT_NCFORC_NUM_ID	cid = contact id

BINOUT_NCFORC_NUM_SLAVEID	int	1	cid = contact id
BINOUT_NCFORC_SLAVE_IDS	unsigned int	BINOUT_NCFORC_NUM_SLAVEID	cid = contact id
BINOUT_NCFORC_NUM_MASTERID	int	1	cid = contact id
BINOUT_NCFORC_MASTER_IDS	unsigned int	BINOUT_NCFORC_NUM_MASTERID	cid = contact id
BINOUT_NCFORC_NUM_TIMESTEP	int	1	cid = contact id
BINOUT_NCFORC_X	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id
BINOUT_NCFORC_NUM_COMPONENT	int	1	cid = contact id
BINOUT_NCFORC_COMPONENTS	BinoutStringArray	BINOUT_NCFORC_NUM_COMPONENT,	cid = contact id
BINOUT_NCFORC_FORCE_X	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_NCFORC_FORCE_Y	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_NCFORC_FORCE_Z	double	BINOUT_NCFORC_N	cid = contact id, id =

		UM_TIMESTEP	master/slave node id
BINOUT_NCFORC_PRESSURE	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_NCFORC_COORDINATE_X	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_NCFORC_COORDINATE_Y	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_NCFORC_COORDINATE_Z	double	BINOUT_NCFORC_NUM_TIMESTEP	cid = contact id, id = master/slave node id
BINOUT_RCFORC_NUM_ID	int	1	ignore
BINOUT_RCFORC_IDS	unsigned int	BINOUT_RCFORC_NUM_ID	ignore
BINOUT_RCFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_RCFORC_X	double	BINOUT_RCFORC_NUM_TIMESTEP	ignore
BINOUT_RCFORC_NUM_COMPONENT	int	1	ignore
BINOUT_RCFORC_COMPONENTS	BinoutStringArray	BINOUT_RCFORC_NUM_COMPONENT	ignore

BINOUT_RCFORC_MASS	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_TIE_AREA	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_TIE_COUNT	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_FORCE_X	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_FORCE_Y	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_FORCE_Z	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_RESULTANT_FORCE	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_MOMENT_X	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_RCFORC_MOMENT_Y	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE

BINOUT_RCFORC_MOMENT_Z	double	BINOUT_RCFORC_NUM_TIMESTEP	id, idtype: BINOUT_RCFORC_ID_MASTER, BINOUT_RCFORC_ID_SLAVE
BINOUT_SECFORC_NUM_ID	int	1	ignore
BINOUT_SECFORC_IDS	unsigned int	BINOUT_SECFORC_NUM_ID	ignore
BINOUT_SECFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_SECFORC_X	double	BINOUT_SECFORC_NUM_TIMESTEP	ignore
BINOUT_SECFORC_NUM_COMPONENT	int	1	ignore
BINOUT_SECFORC_COMPONENTS	BinoutStringArray	BINOUT_SECFORC_NUM_COMPONENT	ignore
BINOUT_SECFORC_FORCE_X	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_FORCE_Y	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_FORCE_Z	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_FORCE_TOTAL	double	BINOUT_SECFORC_NUM_TIMESTEP	id

BINOUT_SECFORC_MOMENT_X	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_MOMENT_Y	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_MOMENT_Z	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_MOMENT_TOTAL	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_CENTROID_X	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_CENTROID_Y	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_CENTROID_Z	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_SECFORC_AREA	double	BINOUT_SECFORC_NUM_TIMESTEP	id
BINOUT_DCFAIL_NUM_ID	int	1	ignore
BINOUT_DCFAIL_IDS	unsigned int	BINOUT_DCFAIL_NUM_ID	ignore
BINOUT_DCFAIL_NUM_TIMESTEP	int	1	ignore

BINOUT_DCFAIL_X	double	BINOUT_DCFAIL_NUM_TIMESTEP	ignore
BINOUT_DCFAIL_NUM_COMPONENT	int	1	ignore
BINOUT_DCFAIL_COMPONENTS	BinoutStringArray	BINOUT_DCFAIL_NUM_COMPONENT	ignore
BINOUT_DCFAIL_AREA	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_BENDING_TERM	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_EFFECTIVE_STRAIN_RATE	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_FAILURE_FUNCTION	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_NORMAL_TERM	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_SHEAR_TERM	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_AREA_SOL	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
		BINOUT_DCFAIL_N	

BINOUT_DCFAIL_AXIAL_FORCE	double	UM_TIMESTEP	id
BINOUT_DCFAIL_SHEAR_FORCE	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_TORSIONAL_MOMENT	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_DCFAIL_BENDING_MOMENT	double	BINOUT_DCFAIL_NUM_TIMESTEP	id
BINOUT_PRTUBE_NUM_ID	int	1	ignore
BINOUT_PRTUBE_IDS	unsigned int	BINOUT_PRTUBE_NUM_ID	ignore
BINOUT_PRTUBE_NUM_TIMESTEP	int	1	ignore
BINOUT_PRTUBE_X	double	BINOUT_PRTUBE_NUM_TIMESTEP	ignore
BINOUT_PRTUBE_NUM_COMPONENT	int	1	ignore
BINOUT_PRTUBE_COMPONENTS	BinoutStringArray	BINOUT_PRTUBE_NUM_COMPONENT	ignore
BINOUT_PRTUBE_AREA	double	BINOUT_PRTUBE_NUM_TIMESTEP	id

BINOUT_PRTUBE_PRESSURE	double	BINOUT_PRTUBE_NUM_TIMESTEP	id
BINOUT_PRTUBE_VELOCITY	double	BINOUT_PRTUBE_NUM_TIMESTEP	id
BINOUT_PRTUBE_DENSITY	double	BINOUT_PRTUBE_NUM_TIMESTEP	id
BINOUT_GCEOUT_NUM_ID	int	1	ignore
BINOUT_GCEOUT_IDS	unsigned int	BINOUT_GCEOUT_NUM_ID	ignore
BINOUT_GCEOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_GCEOUT_X	double	BINOUT_GCEOUT_NUM_TIMESTEP	ignore
BINOUT_GCEOUT_NUM_COMPONENT	int	1	ignore
BINOUT_GCEOUT_COMPONENTS	BinoutStringArray	BINOUT_GCEOUT_NUM_COMPONENT	ignore
BINOUT_GCEOUT_FORCE_X	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_FORCE_Y	double	BINOUT_GCEOUT_NUM_TIMESTEP	id

BINOUT_GCEOUT_FORCE_Z	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_MOMENT_X	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_MOMENT_Y	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_MOMENT_Z	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_FORCE_MAGNITUDE	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_GCEOUT_MOMENT_MAGNITUDE	double	BINOUT_GCEOUT_NUM_TIMESTEP	id
BINOUT_DEFGEO_NUM_ID	int	1	ignore
BINOUT_DEFGEO_IDS	unsigned int	BINOUT_DEFGEO_NUM_ID	ignore
BINOUT_DEFGEO_NUM_TIMESTEP	int	1	ignore
BINOUT_DEFGEO_X	double	BINOUT_DEFGEO_NUM_TIMESTEP	ignore
BINOUT_DEFGEO_NUM_COMPONENT	int	1	ignore

BINOUT_DEFGEO_COMPONENTS	BinoutStringArray	BINOUT_DEFGEO_NUM_COMPONENT	ignore
BINOUT_DEFGEO_DISPLACEMENT_X	double	BINOUT_DEFGEO_NUM_TIMESTEP	id
BINOUT_DEFGEO_DISPLACEMENT_Y	double	BINOUT_DEFGEO_NUM_TIMESTEP	id
BINOUT_DEFGEO_DISPLACEMENT_Z	double	BINOUT_DEFGEO_NUM_TIMESTEP	id
BINOUT_DEFGEO_DISPLACEMENT_MAX	double	BINOUT_DEFGEO_NUM_TIMESTEP	id
BINOUT_DEMRCFORC_NUM_ID	int	1	ignore
BINOUT_DEMRCFORC_IDS	unsigned int	BINOUT_DEMRCFORC_NUM_ID	ignore
BINOUT_DEMRCFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_DEMRCFORC_X	double	BINOUT_DEMRCFORC_NUM_TIMESTEP	ignore
BINOUT_DEMRCFORC_NUM_COMPONENT	int	1	ignore
BINOUT_DEMRCFORC_COMPONEN	BinoutStringAr	BINOUT_DEMRCFOR	ignore

TS	ray	C_NUM_COMPONENT	
BINOUT_DEMRCFORC_FORCE_X	double	BINOUT_DEMRCFORC_NUM_TIMESTEP	id
BINOUT_DEMRCFORC_FORCE_Y	double	BINOUT_DEMRCFORC_NUM_TIMESTEP	id
BINOUT_DEMRCFORC_FORCE_Z	double	BINOUT_DEMRCFORC_NUM_TIMESTEP	id
BINOUT_BRNGOUT_NUM_ID	int	1	ignore
BINOUT_BRNGOUT_IDS	unsigned int	BINOUT_BRNGOUT_NUM_ID	ignore
BINOUT_BRNGOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_BRNGOUT_X	double	BINOUT_BRNGOUT_NUM_TIMESTEP	ignore
BINOUT_BRNGOUT_NUM_COMPONENT	int	1	ignore
BINOUT_BRNGOUT_COMPONENTS	BinoutStringArray	BINOUT_BRNGOUT_NUM_COMPONENT	ignore
BINOUT_BRNGOUT_FFXG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id

BINOUT_BRNGOUT_FFYG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FFZG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FMXG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FMYG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FMZG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FFX	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FFY	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FFZ	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FMX	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_FMY	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_DXG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id

BINOUT_BRNGOUT_DYG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_DZG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_AXG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_AYG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_AZG	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_DXL	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_DYL	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_DZL	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_BXL	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_BRNGOUT_BYL	double	BINOUT_BRNGOUT_NUM_TIMESTEP	id
BINOUT_DBFSI_NUM_ID	int	1	ignore

BINOUT_DBFSI_IDS	unsigned int	BINOUT_DBFSI_NUM_ID	ignore
BINOUT_DBFSI_NUM_TIMESTEP	int	1	ignore
BINOUT_DBFSI_X	double	BINOUT_DBFSI_NUM_TIMESTEP	ignore
BINOUT_DBFSI_NUM_COMPONENT	int	1	ignore
BINOUT_DBFSI_COMPONENTS	BinoutStringArray	BINOUT_DBFSI_NUM_COMPONENT	ignore
BINOUT_DBFSI_FX	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_FY	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_FZ	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_PRES	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_MOUT	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_OBSOLETE	double	BINOUT_DBFSI_NU	id

		M_TIMESTEP	
BINOUT_DBFSI_GX	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_GY	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_GZ	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_PTMP	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_DBFSI_PDT	double	BINOUT_DBFSI_NUM_TIMESTEP	id
BINOUT_SBTOUT_NUM_BELT_ID	int	1	ignore
BINOUT_SBTOUT_BELT_IDS	usigned int	BINOUT_SBTOUT_NUM_BELT_ID	ignore
BINOUT_SBTOUT_NUM_RETRACTOR_ID	int	1	ignore
BINOUT_SBTOUT_RETRACTOR_IDS	usigned int	BINOUT_SBTOUT_NUM_RETRACTOR_ID	ignore
BINOUT_SBTOUT_NUM_SLIPRING_ID	int	1	ignore
BINOUT_SBTOUT_SLIPRING_ID	usigned	BINOUT_SBTOUT_N	ignore

S	int	UM_SLIPRING_ID	
BINOUT_SBTOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_SBTOUT_X	double	BINOUT_SBTOUT_NUM_TIMESTEP	ignore
BINOUT_SBTOUT_NUM_COMPONENT	int	1	ignore
BINOUT_SBTOUT_COMPONENTS	BinoutStringArray	BINOUT_SBTOUT_NUM_COMPONENT	ignore
BINOUT_SBTOUT_BELT_FORCE	double	BINOUT_SBTOUT_TIMESTEP	id, idtype: BINOUT_SBTOUT_ID_BELT
BINOUT_SBTOUT_BELT_LENGTH	double	BINOUT_SBTOUT_TIMESTEP	id, idtype: BINOUT_SBTOUT_ID_BELT
BINOUT_SBTOUT_RETRACTOR_FORCE	double	BINOUT_SBTOUT_TIMESTEP	id, idtype: BINOUT_SBTOUT_ID_RETRACTOR
BINOUT_SBTOUT_RETRACTOR_PULL_OUT	double	BINOUT_SBTOUT_TIMESTEP	id, idtype: BINOUT_SBTOUT_ID_RETRACTOR
BINOUT_SBTOUT_RING_SLIP	double	BINOUT_SBTOUT_TIMESTEP	id, idtype: BINOUT_SBTOUT_ID_SLIPRING
BINOUT_BNDOUT_NUM_TIMESTEP	int	1	idtype

BINOUT_BNDOUT_X	double	BINOUT_BNDOUT_NUM_TIMESTEP,	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_NUM_ID	int	1	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_IDS	usigned int	BINOUT_BNDOUT_NUM_ID	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES,

			BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_NUM_COMPONENT	int	1	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_COMPONENTS	BinoutStringArray	BINOUT_BNDOUT_NUM_COMPONENT	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES,

			BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_FORCE_X	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_FORCE_Y	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_FORCE_Z	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES,

			BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_ENERGY	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_MOMENT_X	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRI

			GIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_MOMENT_Y	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_MOMENT_Z	double	BINOUT_BNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
		BINOUT_BNDOUT_N	idtype =

BINOUT_BNDOUT_TOTAL_X	double	UM_TIMESTEP	BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_TOTAL_Y	double	BINOUT_BNDOUT_NUM_TIMESTEP	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_TOTAL_Z	double	BINOUT_BNDOUT_NUM_TIMESTEP	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES,

			BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_BNDOUT_ETOTAL	double	BINOUT_BNDOUT_NUM_TIMESTEP	idtype = BINOUT_BNDOUT_ID_DISCRETENODES, BINOUT_BNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_BNDOUT_ID_PRESSURE, BINOUT_BNDOUT_ID_VELOCITYNODES, BINOUT_BNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_BNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_NUM_TIMESTEP	int	1	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES,

			BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_X	double	BINOUT_NBNDOUT_NUM_TIMESTEP,	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_NUM_ID	int	1	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES,

			BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_IDS	usigned int	BINOUT_NBNDOUT_NUM_ID	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_NUM_COMPONENT	int	1	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATI

			ONRIGIDBODIES,
BINOUT_NBNDOUT_COMPONENTS	BinoutStringArray	BINOUT_NBNDOUT_NUM_COMPONENT	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_FORCE_X	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,

BINOUT_NBNDOUT_FORCE_Y	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_FORCE_Z	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
		BINOUT_NBNDOUT_	id, idtype =

BINOUT_NBNDOUT_ENERGY	double	NUM_TIMESTEP	BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_MOMENT_X	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_MOMENT_Y	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES,

			BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_MOMENT_Z	double	BINOUT_NBNDOUT_NUM_TIMESTEP	id, idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_TOTAL_X	double	BINOUT_NBNDOUT_NUM_TIMESTEP	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES,

			BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_TOTAL_Y	double	BINOUT_NBNDOUT_NUM_TIMESTEP	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_TOTAL_Z	double	BINOUT_NBNDOUT_NUM_TIMESTEP	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES,

			BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_NBNDOUT_ETOTAL	double	BINOUT_NBNDOUT_NUM_TIMESTEP	idtype = BINOUT_NBNDOUT_ID_DISCRETENODES, BINOUT_NBNDOUT_ID_DISCRETERIGIDBODIES, BINOUT_NBNDOUT_ID_PRESSURE, BINOUT_NBNDOUT_ID_VELOCITYNODES, BINOUT_NBNDOUT_ID_VELOCITYRIGIDBODIES, BINOUT_NBNDOUT_ID_ORIENTATIONRIGIDBODIES,
BINOUT_JNTFORC_NUM_TYPES	int	1	ignore
BINOUT_JNTFORC_TYPES	BinoutStringArray	BINOUT_JNTFORC_NUM_TYPES	ignore

BINOUT_JNTFORC_NUM_ID	int	1	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_IDS	unsigned int	BINOUT_JNTFORC_NUM_ID	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_NUM_TIMESTEP	int	1	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_X	double	BINOUT_NBNDOUT_NUM_TIMESTEP,	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_NUM_COMPONENT	int	1,	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_COMPONENTS	BinoutStringArray	BINOUT_JNTFORC_NUM_COMPONENT,	idtype: BINOUT_JNTFORC_ID_JOINTS, BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL, BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED

BINOUT_JNTFORC_FORCE_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_FORCE_Y	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_FORCE_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_MOMENT_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_MOMENT_Y	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_MOMENT_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_RESULTANT_FORCE	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_RESULTANT_MOMENT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_JOINT_ENERGY	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_JOINTS
BINOUT_JNTFORC_DISPLACEMENT_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_DISPLACEME		BINOUT_JNTFORC_	id, idtype:

NT_Y	double	NUM_TIMESTEP,	BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_DISPLACEMENT_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_DISPLACEMENT_X_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_DISPLACEMENT_Y_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_DISPLACEMENT_Z_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_STIFFNESS_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_DAMPING_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_TOTAL_X	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_STIFFNESS_Y	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_DAMP		BINOUT_JNTFORC_	id, idtype:

ING_Y	double	NUM_TIMESTEP,	BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_TOTAL_Y	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_STIFFNESS_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_DAMPING_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_FORCE_TOTAL_Z	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_TRANSLATION_JOINT_ENERGY	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_TRANSLATIONAL
BINOUT_JNTFORC_PHI_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PHI_DEGREES_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_THETA_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_THETA_DEGR		BINOUT_JNTFORC_	id, idtype:

EES_DT	double	NUM_TIMESTEP,	BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PSI_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PSI_DEGREES_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PHI_MOMENT_STIFFNESS	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PHI_MOMENT_DAMPING	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PHI_MOMENT_TOTAL	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_THETA_MOMENT_STIFFNESS	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_THETA_MOMENT_DAMPING	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_THETA_MOMENT_TOTAL	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PSI_MOMENT		BINOUT_JNTFORC_	id, idtype:

_STIFFNESS	double	NUM_TIMESTEP,	BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PSI_MOMENT_DAMPING	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PSI_MOMENT_TOTAL	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_PHI_THETA_PSI_JOINT_ENERGY	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_DEGREES_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_GAMMA_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_GAMMA_DEGREES_DT	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_BETA_DEGREES	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_BETA_DEGRE		BINOUT_JNTFORC_	id, idtype:

ES_DT	double	NUM_TIMESTEP,	BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_MOMENT_STIFFNESS	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_MOMENT_DAMPING	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_MOMENT_TOTAL	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_GAMMA_SCALE_FACTOR	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_BETA_MOMENT_STIFFNESS	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_BETA_MOMENT_DAMPING	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_BETA_MOMENT_TOTAL	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_JNTFORC_ALPHA_GAMMA_BETA_JOINT_ENERGY	double	BINOUT_JNTFORC_NUM_TIMESTEP,	id, idtype: BINOUT_JNTFORC_ID_STIFFNESS_GENERALIZED
BINOUT_NODOUT_SSD_NUM_FRE			

QUENCY	int	1	ignore
BINOUT_NODOUT_SSD_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	ignore
BINOUT_NODOUT_SSD_NUM_ID	int	1	ignore
BINOUT_NODOUT_SSD_IDS	unsigned int	BINOUT_NODOUT_SSD_NUM_ID	ignore
BINOUT_NODOUT_SSD_NUM_MODE	int	1	ignore
BINOUT_NODOUT_SSD_MODES	double	BINOUT_NODOUT_SSD_NUM_MODE	ignore
BINOUT_NODOUT_SSD_NUM_COMPONENT	int	1	datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY, BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_NODOUT_SSD_COMPONENTS	BinoutStringArray	BINOUT_NODOUT_SSD_NUM_COMPONENT	datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY, BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_NODOUT_SSD_TRANSLATIONAL_DISP_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE,

			BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_VEL_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_ACCL_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_DISP_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_VEL_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_ACCL_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL,

			BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_DISP_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_VEL_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_TRANSLATIONAL_ACCL_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_DISP_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_VEL_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY

BINOUT_NODOUT_SSD_ROTATIONAL_ACCL_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_DISP_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_VEL_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_ACCL_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_DISP_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY

BINOUT_NODOUT_SSD_ROTATIONAL_VEL_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_ROTATIONAL_ACCL_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, datatype_option: BINOUT_DATATYPE_ALPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_ROTATIONAL_DISP_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATION
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_ROTATIONAL_DISP_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATION
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_ROTATIONAL_DISP_Z	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATION
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_TRANSLATIONAL_DISP_X	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATION
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_TRANSLATIONAL_DISP_Y	double	BINOUT_NODOUT_SSD_NUM_FREQUENCY	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATION
BINOUT_NODOUT_SSD_MODALCONTRIBUTATION_TRANSLATIONA	double	BINOUT_NODOUT_SSD_NUM_FREQUENC	id, freq_mode, datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTATIO

L_DISP_Z		Y	N
BINOUT_NODOUT_PSD_NUM_FREQUENCY	int	1	ignore
BINOUT_NODOUT_PSD_X	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	ignore
BINOUT_NODOUT_PSD_NUM_ID	int	1	ignore
BINOUT_NODOUT_PSD_IDS	unsigned int	BINOUT_NODOUT_PSD_NUM_ID	ignore
BINOUT_NODOUT_PSD_NUM_COMPONENT	int	1	ignore
BINOUT_NODOUT_PSD_COMPONENTS	BinoutStringArray	BINOUT_NODOUT_PSD_NUM_COMPONENT	ignore
BINOUT_NODOUT_PSD_DISPLACEMENT_X	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_DISPLACEMENT_Y	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_DISPLACEMENT_Z	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_VELOCIT		BINOUT_NODOUT_P	

Y_X	double	SD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_VELOCITY_Y	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_VELOCITY_Z	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_ACCLERATION_X	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_ACCLERATION_Y	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_PSD_ACCLERATION_Z	double	BINOUT_NODOUT_PSD_NUM_FREQUENCY	id
BINOUT_NODOUT_SPCM_NUM_ID	int	1	ignore
BINOUT_NODOUT_SPCM_IDS	unsigned int	BINOUT_NODOUT_SPCM_NUM_ID	ignore
BINOUT_NODOUT_SPCM_NUM_COMPONENT	int	1	ignore
BINOUT_NODOUT_SPCM_COMPONENTS	BinoutStringArray	BINOUT_NODOUT_SPCM_NUM_COMPONENT	ignore

BINOUT_NODOUT_SPCM_DISPLACEMENT_X	double	1	id
BINOUT_NODOUT_SPCM_VELOCITY_X	double	1	id
BINOUT_NODOUT_SPCM_ACCLERATION_X	double	1	id
BINOUT_NODOUT_SPCM_DISPLACEMENT_Y	double	1	id
BINOUT_NODOUT_SPCM_VELOCITY_Y	double	1	id
BINOUT_NODOUT_SPCM_ACCLERATION_Y	double	1	id
BINOUT_NODOUT_SPCM_DISPLACEMENT_Z	double	1	id
BINOUT_NODOUT_SPCM_VELOCITY_Z	double	1	id
BINOUT_NODOUT_SPCM_ACCLERATION_Z	double	1	id
BINOUT_RWFORC_NUM_TIMESTEP	int	1	idtype = BINOUT_RWFORC_ID_FORCES , BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL,

BINOUT_RWFORC_X	double	BINOUT_RWFORC_NUM_TIMESTEP,	idtype = BINOUT_RWFORC_ID_FORCES , BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL,
BINOUT_RWFORC_NUM_ID	int	1	idtype = BINOUT_RWFORC_ID_FORCES , BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,
BINOUT_RWFORC_IDS	unsigned int	BINOUT_RWFORC_NUM_ID	idtype = BINOUT_RWFORC_ID_FORCES , BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,
BINOUT_RWFORC_NUM_NODESET	int	1	id, idtype = BINOUT_RWFORC_ID_TRANSDUCER
BINOUT_RWFORC_NODESETS	unsigned int	BINOUT_RWFORC_NUM_NODESET	id, idtype = BINOUT_RWFORC_ID_TRANSDUCER
BINOUT_RWFORC_NUM_COMPONENT	int	1	idtype = BINOUT_RWFORC_ID_FORCES, BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,,
BINOUT_RWFORC_COMPONENTS	BinoutStringArray	BINOUT_RWFORC_NUM_COMPONENT	idtype = BINOUT_RWFORC_ID_FORCES, BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,,

BINOUT_RWFORC_NORMAL_FORCE	double	BINOUT_RWFORC_X	id, idtype = BINOUT_RWFORC_ID_FORCES
BINOUT_RWFORC_FORCE_X	double	BINOUT_RWFORC_X	id, idtype = BINOUT_RWFORC_ID_FORCES, BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,,
BINOUT_RWFORC_FORCE_Y	double	BINOUT_RWFORC_X	id, idtype = BINOUT_RWFORC_ID_FORCES, BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,,
BINOUT_RWFORC_FORCE_Z	double	BINOUT_RWFORC_X	id, idtype = BINOUT_RWFORC_ID_FORCES, BINOUT_RWFORC_ID_TRANSDUCER or BINOUT_RWFORC_ID_WALL if BINOUT_RWFORC_ID_WALL param.wallid is needed,,
BINOUT_NODFOR_SSD_NUM_FREQUENCY	int	1	ignore
BINOUT_NODFOR_SSD_X	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	ignore
BINOUT_NODFOR_SSD_NUM_ID	int	1	ignore
BINOUT_NODFOR_SSD_IDS	unsigned int	BINOUT_NODFOR_SSD_NUM_ID	ignore
BINOUT_NODFOR_SSD_NUM_GRO			

UPID	int	1	ignore
BINOUT_NODFOR_SSD_GROUP_IDS	unsigned int	BINOUT_NODFOR_SSD_NUM_GROUPID	ignore
BINOUT_NODFOR_SSD_NUM_COMPONENT	int	1	ignore
BINOUT_NODFOR_SSD_COMPONENTS	BinoutStringArray	BINOUT_NODFOR_SSD_NUM_COMPONENT	ignore
BINOUT_NODFOR_SSD_FORCE_X	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_NODE, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_NODFOR_SSD_FORCE_Y	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_NODE, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_NODFOR_SSD_FORCE_Z	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_NODE, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE,

			BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_NODFOR_SSD_TOTAL_X	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_GROUP, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_NODFOR_SSD_TOTAL_Y	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_GROUP, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_NODFOR_SSD_TOTAL_Z	double	BINOUT_NODFOR_SSD_NUM_FREQUENCY	id, idtype: BINOUT_NODFOR_SSD_ID_GROUP, datatype_option = BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY,
BINOUT_ELOUTDET_NUM_TIMESTEP	int	1	ignore
		BINOUT_ELOUTDET	

BINOUT_ELOUTDET_X	double	_NUM_TIMESTEP	ignore
BINOUT_ELOUTDET_NUM_ID	int	1	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_IDS	unsigned int	BINOUT_ELOUTDET_NUM_ID	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_NUM_COMPONENT	int	1	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_COMPONENTS	BinoutStringArray	BINOUT_ELOUTDET_NUM_COMPONENT	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_NUM_IPT	int	1	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_IPTS	unsigned int	BINOUT_ELOUTDET_NUM_IPT	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
			idtype =

BINOUT_ELOUTDET_NUM_NPL	int	1	BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_NPLS	unsigned int	BINOUT_ELOUTDET_NUM_NPL	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_NUM_NQT	int	1	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_NQTS	unsigned int	BINOUT_ELOUTDET_NUM_NQT	idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG
BINOUT_ELOUTDET_EFFSG	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_EPS_XX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype =

			BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_EPS_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_EPS_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_EPS_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl,

			nqt
BINOUT_ELOUTDET_EPS_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_EPS_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_XX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or

			BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or

			BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_SIG_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_YIELD	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_PLASTIC_STRAIN	double	BINOUT_ELOUTDET_NUM_TIMESTEP	datatype_option = BINOUT_DATATYPE_ELOUTDET_INTEGRATION_POINTS or BINOUT_DATATYPE_ELOUTDET_NODAL_POINTS, idtype = BINOUT_ELOUTDET_ID_SOLID,BINOUT_ELOUTDET_ID_SHELL,BINOUT_ELOUTDET_ID_TSHELL or BINOUT_ELOUTDET_ID_NODAVG, id, ipt, npl, nqt
BINOUT_ELOUTDET_LOWER_SIG		BINOUT_ELOUTDET	idtype=BINOUT_ELOUTDET_ID_NODAVG,

_XX	double	_NUM_TIMESTEP	id
BINOUT_ELOUTDET_LOWER_SIG_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_SIG_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_SIG_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_SIG_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_SIG_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_YIELD	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_SIG_XX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_SIG_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_SIG_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_SIG_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id

BINOUT_ELOUTDET_UPPER_SIG_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_SIG_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_YIELD	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_XX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_LOWER_EPS_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_EPS_XX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_EPS_YY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id

BINOUT_ELOUTDET_UPPER_EPS_ZZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_EPS_XY	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_EPS_YZ	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUTDET_UPPER_EPS_ZX	double	BINOUT_ELOUTDET_NUM_TIMESTEP	idtype=BINOUT_ELOUTDET_ID_NODAVG, id
BINOUT_ELOUT_SSD_NUM_FREQUENCY	int	1	ignore
BINOUT_ELOUT_SSD_X	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	ignore
BINOUT_ELOUT_SSD_NUM_ID	int	1	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_ID_SHELL
BINOUT_ELOUT_SSD_IDS	unsigned int	BINOUT_ELOUT_SSD_NUM_ID	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_ID_SHELL
BINOUT_ELOUT_SSD_NUM_IPT	int	1	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_

			ID_TSHELL, BINOUT_ELOUT_ID_SHELL
BINOUT_ELOUT_SSD_IPTS	unsigned int	BINOUT_ELOUT_SSD_NUM_IPT	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_ID_SHELL
BINOUT_ELOUT_SSD_NUM_MODE	int	1	ignore
BINOUT_ELOUT_SSD_MODES	double	BINOUT_ELOUT_SSD_NUM_MODE	ignore
BINOUT_ELOUT_SSD_NUM_COMPONENT	int	1	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY, BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_COMPONENTS	BinoutStringArray	BINOUT_ELOUT_SSD_NUM_COMPONENT	idtype: BINOUT_ELOUT_SSD_ID_BEAM,BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL,

			BINOUT_DATATYPE_IMAGINARY, BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_STRESS_XX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRESS_YY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRESS_ZZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRESS_X		BINOUT_ELOUT_SS	id, ipt(shell,thickshell),

Y	double	D_NUM_FREQUENCY	idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRESS_YZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRESS_ZX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SSD_ID_SOLID,BINOUT_ELOUT_SSD_ID_TSHELL,BINOUT_ELOUT_ID_SHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_XX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL,

			BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_YY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_ZZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_XY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_YZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL,

			BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_STRAIN_ZX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SOLID datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_XX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_YY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_ZZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE,

			BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_XY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_YZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_LOWER_STRAIN_ZX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_XX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE,

			BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_YY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_ZZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_XY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_YZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE,

			BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_UPPER_STRAIN_ZX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_SHELL, BINOUT_ELOUT_SSD_ID_TSHELL datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_AXIAL	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_SHEAR_S	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_SHEAR_T	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL,

			BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_MOMENT_S	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_MOMENT_T	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_TORSION	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_SIGMA_11	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY

BINOUT_ELOUT_SSD_SIGMA_12	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_SIGMA_31	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_PLASTIC_EPS	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_AXIAL_STRAIN	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_AMPLITUDE, BINOUT_DATATYPE_PHASEANGLE, BINOUT_DATATYPE_REAL, BINOUT_DATATYPE_IMAGINARY
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_XX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID,

			BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_YY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID, BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_ZZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID, BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_XY	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID, BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_YZ	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID, BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option:

			BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_STRESS_ZX	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, ipt(shell, thickshell), freq_mode, idtype: BINOUT_ELOUT_SSD_ID_SOLID, BINOUT_ELOUT_SSD_ID_TSHELL, BINOUT_ELOUT_SSD_ID_SHELL datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_AXIAL	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_SHEAR_S	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_SHEAR_T	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_MOMENT_S	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION

BINOUT_ELOUT_SSD_MODALCONTRIBUTION_MOMENT_T	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_SSD_MODALCONTRIBUTION_TORSION	double	BINOUT_ELOUT_SSD_NUM_FREQUENCY	id, freq_mode, idtype: BINOUT_ELOUT_SSD_ID_BEAM datatype_option: BINOUT_DATATYPE_MODALCONTRIBUTION
BINOUT_ELOUT_PSD_NUM_FREQUENCY	int	1	ignore
BINOUT_ELOUT_PSD_X	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	ignore
BINOUT_ELOUT_PSD_NUM_ID	int	1	idtype: BINOUT_ELOUT_PSD_ID_BEAM, BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_IDS	unsigned int	BINOUT_ELOUT_PSD_NUM_ID	idtype: BINOUT_ELOUT_PSD_ID_BEAM, BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_NUM_IPT	int	1	idtype: BINOUT_ELOUT_PSD_ID_BEAM, BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
	unsigne	BINOUT_ELOUT_PS	idtype: BINOUT_ELOUT_PSD_ID_BEAM,

BINOUT_ELOUT_PSD_IPTS	d int	D_NUM_IPT	BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_NUM_COMPONENT	int	1	idtype: BINOUT_ELOUT_PSD_ID_BEAM, BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_COMPONENTS	BinoutStringArray	BINOUT_ELOUT_PSD_NUM_COMPONENT	idtype: BINOUT_ELOUT_PSD_ID_BEAM, BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRESS_XX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRESS_YY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRESS_ZZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRESS_XY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL

BINOUT_ELOUT_PSD_STRESS_YZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRESS_ZX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_PSD_ID_SOLID, BINOUT_ELOUT_PSD_ID_TSHELL, BINOUT_ELOUT_PSD_ID_SHELL
BINOUT_ELOUT_PSD_STRAIN_XX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_STRAIN_YY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_STRAIN_ZZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_STRAIN_XY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_STRAIN_YZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_STRAIN_ZX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SOLID
BINOUT_ELOUT_PSD_LOWER_STRAIN_XX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL

BINOUT_ELOUT_PSD_LOWER_STRAIN_YY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_LOWER_STRAIN_ZZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_LOWER_STRAIN_XY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_LOWER_STRAIN_YZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_LOWER_STRAIN_ZX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_UPPER_STRAIN_XX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_UPPER_STRAIN_YY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_UPPER_STRAIN_ZZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_UPPER_STRAIN_XY	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL

BINOUT_ELOUT_PSD_UPPER_STRAIN_YZ	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_UPPER_STRAIN_ZX	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_SHELL, BINOUT_ELOUT_PSD_ID_TSHELL
BINOUT_ELOUT_PSD_AXIAL	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_SHEAR_S	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_SHEAR_T	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_MOMENT_S	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_MOMENT_T	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_TORSION	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_SIGMA_11	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_SIGMA_12	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_SIGMA_31	double	BINOUT_ELOUT_PS	id, idtype:

		D_NUM_FREQUENCY	BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_PLASTIC_EPS	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_PSD_AXIAL_STRAIN	double	BINOUT_ELOUT_PSD_NUM_FREQUENCY	id, idtype: BINOUT_ELOUT_PSD_ID_BEAM
BINOUT_ELOUT_SPCM_NUM_ID	int	1	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL
BINOUT_ELOUT_SPCM_IDS	unsigned int	BINOUT_ELOUT_SPCM_NUM_ID	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL
BINOUT_ELOUT_SPCM_NUM_IPT	int	1	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL
BINOUT_ELOUT_SPCM_IPTS	int	BINOUT_ELOUT_SPCM_NUM_IPT	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL
BINOUT_ELOUT_SPCM_NUM_COMPONENT	int	1	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL

BINOUT_ELOUT_SPCM_COMPONENTS	BinoutStringArray	BINOUT_ELOUT_SPCM_NUM_COMPONENT	idtype: BINOUT_ELOUT_SPCM_ID_BEAM, BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_TSHELL, BINOUT_ELOUT_SPCM_ID_SHELL
BINOUT_ELOUT_SPCM_STRESS_XX	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_STRESS_YY	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_STRESS_ZZ	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_STRESS_XY	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_STRESS_YZ	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID, BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_STRESS_ZX	double	1	id, ipt(shell,thickshell), idtype: BINOUT_ELOUT_SPCM_ID_SOLID,

			BINOUT_ELOUT_SPCM_ID_SHELL, BINOUT_ELOUT_SPCM_ID_TSHELL
BINOUT_ELOUT_SPCM_AXIAL	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_SHEAR_S	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_SHEAR_T	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_MOMENT_S	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_MOMENT_T	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_TORSION	double	1	id, idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_SIGMA_11	double	1	id, ipt(beam), idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_SIGMA_12	double	1	id, ipt(beam), idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_SIGMA_31	double	1	id, ipt(beam), idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_ELOUT_SPCM_PLASTIC_EPS	double	1	id, ipt(beam), idtype: BINOUT_ELOUT_SPCM_ID_BEAM

BINOUT_ELOUT_SPCM_AXIAL_STRAIN	double	1	id, ipt(beam), idtype: BINOUT_ELOUT_SPCM_ID_BEAM
BINOUT_RBDOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_RBDOUT_X	double	BINOUT_RBDOUT_NUM_TIMESTEP	ignore
BINOUT_RBDOUT_NUM_ID	int	1	ignore
BINOUT_RBDOUT_IDS	unsigned int	BINOUT_RBDOUT_NUM_ID	ignore
BINOUT_RBDOUT_NUM_COMPONENT	int	1	ignore
BINOUT_RBDOUT_COMPONENTS	BinoutStringArray	BINOUT_RBDOUT_NUM_COMPONENT	ignore
BINOUT_RBDOUT_DIRCOS_11	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_12	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_13	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_21	double	BINOUT_RBDOUT_N	id

		UM_TIMESTEP	
BINOUT_RBDOUT_DIRCOS_22	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_23	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_31	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_32	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_DIRCOS_33	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_AX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_AY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_AZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_DX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_DY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id

BINOUT_RBDOUT_GLOBAL_DZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RAX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RAY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RAZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RDX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RDY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RDZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RVX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RVY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_RVZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_VX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id

BINOUT_RBDOUT_GLOBAL_VY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_VZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_X	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_Y	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_GLOBAL_Z	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_AX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_AY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_AZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_DX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_DY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_DZ	double	BINOUT_RBDOUT_N	id

		UM_TIMESTEP	
BINOUT_RBDOUT_LOCAL_RAX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RAY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RAZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RDX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RDY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RDZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RVX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RVY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_RVZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_VX	double	BINOUT_RBDOUT_NUM_TIMESTEP	id

BINOUT_RBDOUT_LOCAL_VY	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_RBDOUT_LOCAL_VZ	double	BINOUT_RBDOUT_NUM_TIMESTEP	id
BINOUT_SLEOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_SLEOUT_X	double	BINOUT_SLEOUT_NUM_TIMESTEP	ignore
BINOUT_SLEOUT_NUM_ID	int	1	ignore
BINOUT_SLEOUT_IDS	unsigned int	BINOUT_SLEOUT_NUM_ID	ignore
BINOUT_SLEOUT_NUM_COMPONENT	int	1	ignore
BINOUT_SLEOUT_COMPONENTS	BinoutStringArray	BINOUT_SLEOUT_NUM_COMPONENT	ignore
BINOUT_SLEOUT_FRICTION_ENERGY	double	BINOUT_SLEOUT_NUM_TIMESTEP	id
BINOUT_SLEOUT_MASTER	double	BINOUT_SLEOUT_NUM_TIMESTEP	id
BINOUT_SLEOUT_SLAVE	double	BINOUT_SLEOUT_NUM_TIMESTEP	id

BINOUT_SLEOUT_SLAVEMASTER	double	BINOUT_SLEOUT_NUM_TIMESTEP	id
BINOUT_SLEOUT_TOTAL_ENERGY	double	BINOUT_SLEOUT_NUM_TIMESTEP	ignore
BINOUT_SLEOUT_TOTAL_FRICTION	double	BINOUT_SLEOUT_NUM_TIMESTEP	ignore
BINOUT_SLEOUT_TOTAL_MASTER	double	BINOUT_SLEOUT_NUM_TIMESTEP	ignore
BINOUT_SLEOUT_TOTAL_SLAVE	double	BINOUT_SLEOUT_NUM_TIMESTEP	ignore
BINOUT_SPCFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_SPCFORC_X	double	BINOUT_SPCFORC_NUM_TIMESTEP	ignore
BINOUT_SPCFORC_NUM_FORCEID	int	1	ignore
BINOUT_SPCFORC_FORCE_IDS	unsigned int	BINOUT_SPCFORC_NUM_FORCEID	ignore
BINOUT_SPCFORC_NUM_FORCESETID	int	1	ignore
BINOUT_SPCFORC_FORCESET_I	unsigne	BINOUT_SPCFORC_	ignore

DS	d int	NUM_FORCESETID	
BINOUT_SPCFORC_NUM_COMPONENT	int	1	ignore
BINOUT_SPCFORC_COMPONENTS	BinoutStringArray	BINOUT_SPCFORC_NUM_COMPONENT	ignore
BINOUT_SPCFORC_FORCE_X	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = force_id
BINOUT_SPCFORC_FORCE_Y	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = force_id
BINOUT_SPCFORC_FORCE_Z	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = force_id
BINOUT_SPCFORC_NUM_MOMENTID	int	1	ignore
BINOUT_SPCFORC_MOMENT_IDS	unsigned int	BINOUT_SPCFORC_NUM_MOMENTID	ignore
BINOUT_SPCFORC_NUM_MOMENTSETID	int	1	ignore
BINOUT_SPCFORC_MOMENTSET_IDS	unsigned int	BINOUT_SPCFORC_NUM_MOMENTSETID	ignore
BINOUT_SPCFORC_MOMENT_X	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = moment_id

BINOUT_SPCFORC_MOMENT_Y	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = moment_id
BINOUT_SPCFORC_MOMENT_Z	double	BINOUT_SPCFORC_NUM_TIMESTEP	id = moment_id
BINOUT_SPCFORC_RESULTANT_X	double	BINOUT_SPCFORC_NUM_TIMESTEP	ignore
BINOUT_SPCFORC_RESULTANT_Y	double	BINOUT_SPCFORC_NUM_TIMESTEP	ignore
BINOUT_SPCFORC_RESULTANT_Z	double	BINOUT_SPCFORC_NUM_TIMESTEP	ignore
BINOUT_SWFORC_NUM_TIMESTEP	int	1	ignore
BINOUT_SWFORC_X	double	BINOUT_SWFORC_NUM_TIMESTEP	ignore
BINOUT_SWFORC_NUM_ID	int	1	ignore
BINOUT_SWFORC_IDS	unsigned int	BINOUT_SWFORC_NUM_ID	ignore
BINOUT_SWFORC_NUM_COMPONENT	int	1	ignore
BINOUT_SWFORC_COMPONENTS	BinoutStringAr	BINOUT_SWFORC_NUM_COMPONENT	ignore

	ray		
BINOUT_SWFORC_AXIAL	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY
BINOUT_SWFORC_FAILURE	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY
BINOUT_SWFORC_LENGTH	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY
BINOUT_SWFORC_RESULTANT_MOMENT	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY

BINOUT_SWFORC_SHEAR	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY
BINOUT_SWFORC_TORSION	double	BINOUT_SWFORC_NUM_TIMESTEP	id, idtype: BINOUT_SWFORC_ID_CONSTRAINT, BINOUT_SWFORC_ID_WELD, BINOUT_SWFORC_ID_BEAM, BINOUT_SWFORC_ID_SOLID, BINOUT_SWFORC_ID_NONNODAL_CONSTRAINT, BINOUT_SWFORC_ID_SOLID_ASSEMBLY
BINOUT_CURVOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_CURVOUT_X	double	BINOUT_CURVOUT_NUM_TIMESTEP	ignore
BINOUT_CURVOUT_NUM_ID	int	1	ignore
BINOUT_CURVOUT_IDS	unsigned int	BINOUT_CURVOUT_NUM_ID	ignore
BINOUT_CURVOUT_NUM_COMPONENT	int	1	ignore
BINOUT_CURVOUT_COMPONENTS	BinoutStringArray	BINOUT_CURVOUT_NUM_COMPONENT	ignore

BINOUT_CURVOUT_VALUES	double	BINOUT_CURVOUT_NUM_TIMESTEP	id
BINOUT_DBSENSOR_NUM_TIMESTEP	int	1	ignore
BINOUT_DBSENSOR_X	double	BINOUT_DBSENSOR_NUM_TIMESTEP	ignore
BINOUT_DBSENSOR_NUM_ID	int	1	ignore
BINOUT_DBSENSOR_IDS	unsigned int	BINOUT_DBSENSOR_NUM_ID	ignore
BINOUT_DBSENSOR_NUM_COMPONENT	int	1	ignore
BINOUT_DBSENSOR_COMPONENTS	BinoutStringArray	BINOUT_DBSENSOR_NUM_COMPONENT	ignore
BINOUT_DBSENSOR_PRESSURE	double	BINOUT_DBSENSOR_NUM_TIMESTEP	id
BINOUT_DBSENSOR_SOLID_ID	double	BINOUT_DBSENSOR_NUM_TIMESTEP	id
BINOUT_DBSENSOR_TEMPERATURE	double	BINOUT_DBSENSOR_NUM_TIMESTEP	id
BINOUT_DBSENSOR_POSITION_	double	BINOUT_DBSENSOR	id

X		_NUM_TIMESTEP	
BINOUT_DBSENSOR_POSITION_Y	double	BINOUT_DBSENSOR_NUM_TIMESTEP	id
BINOUT_DBSENSOR_POSITION_Z	double	BINOUT_DBSENSOR_NUM_TIMESTEP	id
BINOUT_DBBEMAC_NUM_TIMESTEP	int	1	ignore
BINOUT_DBBEMAC_X	double	BINOUT_DBBEMAC_NUM_TIMESTEP	ignore
BINOUT_DBBEMAC_NUM_ID	int	1	ignore
BINOUT_DBBEMAC_IDS	unsigned int	BINOUT_DBBEMAC_NUM_ID	ignore
BINOUT_DBBEMAC_NUM_COMPONENT	int	1	ignore
BINOUT_DBBEMAC_COMPONENTS	BinoutStringArray	BINOUT_DBBEMAC_NUM_COMPONENT	ignore
BINOUT_DBBEMAC_FREQUENCY	double	BINOUT_DBBEMAC_NUM_TIMESTEP	id
BINOUT_DBBEMAC_PRESSURE	double	BINOUT_DBBEMAC_NUM_TIMESTEP	id

BINOUT_DBBEMAC_SOUNDPRESSURELEVEL	double	BINOUT_DBBEMAC_NUM_TIMESTEP	id
BINOUT_ICVOUT_NUM_TIMESTEP	int	1	ignore
BINOUT_ICVOUT_X	double	BINOUT_ICVOUT_NUM_TIMESTEP	ignore
BINOUT_ICVOUT_NUM_ICVIID	int	1	ignore
BINOUT_ICVOUT_ICVIIDS	unsigned int	BINOUT_ICVOUT_NUM_ICVIID	ignore
BINOUT_ICVOUT_NUM_ICVID	int	1	ignore
BINOUT_ICVOUT_ICVIDS	unsigned int	BINOUT_ICVOUT_NUM_ICVID	ignore
BINOUT_ICVOUT_NUM_COMPONENT	int	1	ignore
BINOUT_ICVOUT_COMPONENTS	BinoutStringArray	BINOUT_ICVOUT_NUM_COMPONENT	ignore
BINOUT_ICVOUT_ICVI_AREA	double	BINOUT_ICVOUT_NUM_TIMESTEP	icvi id
BINOUT_ICVOUT_ICVI_FLOW_RATE	double	BINOUT_ICVOUT_NUM_TIMESTEP	icvi id

BINOUT_ICVOUT_ICV_PRESSURE	double	BINOUT_ICVOUT_NUM_TIMESTEP	icv id
BINOUT_ICVOUT_ICV_VOLUME	double	BINOUT_ICVOUT_NUM_TIMESTEP	icv id

Geometry object type

The geometry object type is used to define the type of the geometry entities, the symbols are defined here in the following table, use the exact capital letter as shown in the table to define the type in the API functions

OBJ_SOLID
OBJ_SHELL
OBJ_FACE
OBJ_WIRE
OBJ_EDGE
OBJ_VERTEX

Geometry related Functions

Int **SCLCalcGeomArea**(Int id, Int obj_type, Float *result)
Purpose: Calculate the area of a geometry entity.
Input: id - geometry entity id.
obj_type - Geometry object type, see geometry object type table above for definition
Output: result - area value
Return: status of calculation, 1=success, 0=fail
…….....

Int **SCLCalcGeomVolume**(Int id, Int obj_type, Float *result)
Purpose: Calculate the volume of a geometry entity.
Input: id - geometry element entity id.
obj_type - Geometry object type, see geometry object type table above for definition
Output: result - volume value.
Return: status of calculation, 1=success, 0=fail
…….....

Int **SCLCalcGeomLength**(Int id, Int obj_type, Float *result)
Purpose: Calculate the length of geometry entity.
Input: id - Geometry entity id.
obj_type - Geometry object type, see geometry object type table above for definition
Output: result - length value.
Return: status of calculation, 1=success, 0=fail
….....

Float **SCLCalcShapeBoundBox**(Int id, Int obj_type, Float *minPnt, Float* maxPnt)
Purpose: Calculate the bounding box of geometry entity.
Input: id – Geometry entity id.
obj_type – Geometry object type, see geometry object type table
Output: minPnt – min point of the shape's bounding box
maxPnt – max point of the shape's bounding box
Return: status of calculation, 1=success, 0=fail
….....

Float **SCLCalcShapesBoundBox**(Int* ids, Int* obj_types, Int n, Float *minPnt, Float* maxPnt)
Purpose: Calculate the bounding box of geometry entities.
Input: ids – Geometry entities' id.
obj_types – Geometry entities' type.
n – Number of geometry entities.

Output: minPnt – min point of the shapes' bounding box
maxPnt – max point of the shapes' bounding box
Return: status of calculation, 1=success, 0=fail
….....

Int **SCLGeomGetAllShapeIDs**(Int **ids, Int obj_type, Int bLocal)
Purpose: Get ids of all geometry faces.
Input: ids – ids array.
obj_type – Geometry object type, see geometry object type table above for definition
bLocal – if bLocal=1, get all shape including local shape; if bLocal = 0, just get independent shape (non-local) only. A local shape is a shape from a parent object

Output: none
Return: Number of faces.

….....

Int **SCLMeasureGeomShellSolid**(Int id, Int obj_type, Int* numOfFaces, Float* area, Float* volume, Int* bClosed, Float* cgPnt, Float* halfInertiaMatrix, Float* principalVector)

Purpose: Measure shell or solid shape's geometry information
Input: id – the shell or solid shape's ID.
type – the shape's type.
Output: numOfFaces – number faces of the shell or solid shape.
area – area of the shell or solid shape.
volume – volume of the shell or solid shape.
bClosed – close tag of the shell or solid shape.
cgPnt – centre mass point.
halfInertiaMatrix – half inertia matrix. The array is Ixx, Ixy, Ixz, Iyy, Iyz, Izz.
principalVector – principal vector.
Return: 1=success, 0=fail

….....

void **SCLGeomMeasureToText**(Int id, Int obj_type)

Purpose: Issues a geometry measurement for a specified geometry shape
Input: id - the geometry entity id
obj_type - Geometry object type, see geometry object type table above for definition
Output: none
Return: none

….....

void **SCLGeomMeasureToText2**(Int id1, Int obj_type1, Int id2, Int obj_type2)

Purpose: Issues a geometry measurement for two specified geometry shapes
Input: id1 - the geometry entity id for shape 1
obj_type1 - Geometry object type for shape 1, see geometry object type table above for definition
id2 - the geometry entity id for shape 2
obj_type2 – Geometry object type for shape 2
Output: none
Return: none

…….

Int **SCLGeomMeasureGetValueCount()**
Purpose: Get number of return values from Geometry measurement operation.
Input: none
Output: none
Return: Number of return values.
…….

void **SCLGeomMeasureGetValue**(Int i, char *p1, char *p2)
Purpose: Get the geometry measurement value for the ith entry
Input: i - the ith entry
Output: p1 - string contains the name of the measurement
P2 - string contains the values of the measurement, can be multiple floating point numbers, user needs to decode it according to the name
Return: none
…….

Int **SCLGetParentEntityID**(Int childID, Int obj_type1, Int obj_type2)
Purpose: Get the parent entity ID given the child entity ID.
Input: childID – the child entity ID
obj_type1 – object type of the child
obj_type2 – object type of parent
Output: none
Return: parent entity ID
…….

Int **SCLGetParentEntityIDs**(Int childID, Int obj_type1, Int obj_type2, Int **ids)
Purpose: Get the parent entity's ids given the child entity ID.
Input: childID – the child entity ID
obj_type1 – object type of the child
obj_type2 – object type of parent
Output: ids – array contains parent ids. (a child can has multiple parents, e.g. an edge line will have multiple faces)
Return: number of parent entities

…….

Int **SCLGetEntityMaxID**(Int type)
Purpose: Get the max ID of the specified entity type

Input: type – entity type
Return: max ID of the specified entity type

….....

Int **SCLGetSubEntityIDs**(Int parentID, Int obj_type1, Int obj_type2, Int **ids)
Purpose: Get the children entity ids given the parent entity ID
Input: parentID – the parent entity ID
obj_type1 – object type of parent entity
obj_type2 – object type of the children entity
Output: ids – array contains children ids
Return: number of children

….....

Int **SCLIsSonParentRelationship**(Int childID,Int obj_type1, Int parentID, Int obj_type2)
Purpose: Check if the child entity belongs to a parent entity
Input: childID – the child entity ID
obj_type1 – object type of the child entity
parentID – the parent entity ID
obj_type2 – object type of the parent entity
Output: none
Return: True or False

….....

Int **SCLMidPlaneSearchFacePairs**(Int ID,Int obj_type, Int bStrict, Int **ids)
Purpose: Find the mid-plane faces pairs for a given solid entity
Input: ID – the solid entity ID
obj_type – object type, must be OBJ_SOLID
bStrict – key for setting the searching tolerance, 0=relax, 1=strict
Output: face ids array, 2 ids make up a pair
Return: number of pairs

….....

Int **SCLPropagateFacesByAngle**(Int* IDs, Int nFace, Float angleTol, Int** FaceIDs, Int* FaceNum)
Purpose: Given several seed faces, find the same level faces by angle. This is API is from “Shell by Angle” in “Middle Surface” dialog.

Input: IDs – several seed faces ID
nFace – number of seed faces
angleTol – angle tolerance to propagate
Output:
FaceIDs – several seed faces ID
FaceNum – number of propagated faces
Return: 0: no propagated faces found; 1: find propagated faces
….....

Int **SCLSearchSimilarShapes**(Int* IDs, Int* Types, Int n, Float relativeRatio, Int bByDisMeasure, Int** similarShapeIDs, Int** similarTypes, Int* nSimilar)
Purpose: Search the looks like shapes with the seed shapes.
Input: IDs – seed shapes ID
Types –seed shapes' type
n – number of seed shapes
relativeRatio – error ratio, the value is in (0, 1), default value is 0.003
bByDisMeasure – search by distance measure only, default is 0.
Output:
similarShapeIDs – similar shapes' ID after searching
similarTypes – similar shapes' type
nSimilar – number of similar shapes
Return: number of similar shapes
….....

void **SCLDeleteModel**()
Purpose: Delete all components
….....

void **SCLDeleteAllShape**()
Purpose: Delete all geometry shapes
….....

void **SCLDeleteAllFEMPart**()
Purpose: Delete all FEM parts
….....

void **SCLDeleteAssembly**(Int assemblyID)
Purpose: Delete assembly by ID
Input: assemblyID – assembly's ID
….....

void **SCLDeleteAssemblyShape**(Int assemblyID)
Purpose: Delete all shapes in specified assembly
Input: assemblyID – assembly's ID
….....

void **SCLDeleteAssemblyRefGeom**(Int assemblyID)
Purpose: Delete all reference geometry in specified assembly
Input: assemblyID – assembly's ID
….....
void **SCLDeleteAssemblyFEMPart**(Int assemblyID)
Purpose: Delete all FEM parts in specified assembly
Input: assemblyID – assembly's ID
….....

void **SCLDeleteGPart**(Int gpartID)
Purpose: Delete the specified GPart
Input: gpartID – GPart's ID
….....

void **SCLDeleteGPartShape**(Int gpartID)
Purpose: Delete all shapes in specified GPart
Input: gpartID – GPart's ID
….....

void **SCLDeleteGPartFEMPart**(Int gpartID)
Purpose: Delete all FEM parts in specified GPart
Input: gpartID – GPart's ID
….....

void **SCLDeleteEntity**(Int* IDs, Int* types, Int num)
Purpose: Delete entities (shapes, FEM parts and reference geometry) by ID and Type
Input: IDs – entities' ID
types – entities' type
num – entities' number
….....

void **SCLDeleteFEMParts**(Int* IDs, Int num)
Purpose: Delete FEM parts

Input: IDs – parts' ID
num – parts' number

….....

void **SCLCopyModel**(Int toAssemblyID, Int toGPartID)
Purpose: Copy all shapes and FEM parts to specified assembly and GPart
Input: toAssemblyID – the specified assembly ID. -1: copy to a new assembly
toGPartID – the specified GPart ID. -1: copy to a new GPart

….....

void **SCLCopyAssembly**(Int fromAssemblyID, Int toAssemblyID)
Purpose: Copy all entities(shapes, reference geometry and FEM parts) in some assembly to another assembly
Input: fromAssemblyID – the source assembly ID
toAssemblyID – the destination assembly ID. -1: copy to a new assembly

….....

void **SCLCopyAssemblyShape**(Int fromAssemblyID, Int toAssemblyID)
Purpose: Copy all shapes in some assembly to another assembly
Input: fromAssemblyID – the source assembly ID
toAssemblyID – the destination assembly ID. -1: copy to a new assembly
….....

void **SCLCopyAssemblyRefGeom**(Int fromAssemblyID, Int toAssemblyID)
Purpose: Copy all reference geometry in some assembly to another assembly
Input: fromAssemblyID – the source assembly ID
toAssemblyID – the destination assembly ID. -1: copy to a new assembly

….....
void **SCLCopyAssemblyFEMPart**(Int fromAssemblyID, Int toAssemblyID)
Purpose: Copy all FEM parts in some assembly to another assembly
Input: fromAssemblyID – the source assembly ID
toAssemblyID – the destination assembly ID. -1: copy to a new

assembly

…….

void **SCLCopyGPart**(Int fromGpartID, Int toGPartID)
Purpose: Copy all entities in some GPart to another GPart
Input: fromGpartID – the source GPart ID
toGPartID – the destination GPart ID. -1: copy to a new GPart
…….

void **SCLCopyGPartShape**(Int fromGpartID, Int toGPartID)
Purpose: Copy all shapes in some GPart to another GPart
Input: fromGpartID – the source GPart ID
toGPartID – the destination GPart ID. -1: copy to a new GPart
…….

void **SCLCopyGPartFEMPart**(Int fromGpartID, Int toGPartID)
Purpose: Copy all FEM parts in some GPart to another GPart
Input: fromGpartID – the source GPart ID
toGPartID – the destination GPart ID. -1: copy to a new GPart
…….

void **SCLCopyEntity**(Int* ids, Int* types, Int num)
Purpose: Copy entities
Input: ids – the source entities' ID
types – the source entities' type
num – number of source entities
…….
void **SCLCopyFEMParts**(Int* ids, Int num)
Purpose: Copy FEM parts
Input: ids – the source parts' ID
num – number of source parts
…….
void **SCLHoleManage_Analysis**()
Purpose: Start analysis inner hole and outer hole in geometry shapes

…….

void **SCLHoleManage_AnalysisShape**(Int ID, Int type)
Purpose: Start analysis inner hole and outer hole in specified face, shell or

solid shape

Input: ID – the face, shell or solid's ID
type – the shape's type

….....

Int **SCLHoleManage_GetInnerHoleCount**()
Purpose: After analysis, get number of inner holes (inner loop from face)
Return: number of inner hole

….....

Int **SCLHoleManage_GetOutHoleCount**()
Purpose: After analysis, get number of out holes (out hole is grouped by multiple faces)
Return: number of out hole
….....

Int **SCLHoleManage_GetInnerHoleInfor**(Int holeID, char** holeName, Int* holeWireID, Int** holeEdgeIDs, Int* holeEdgeCount, Float* size)
Purpose: After analysis, get the inner hole geometry information
Input: holeID – the inner hole's ID
Output: holeName – the inner hole's name
holeWireID – wire ID of the inner hole
holeEdgeIDs – edges' ID of the inner hole
holeEdgeCount – number of edges from the inner hole
size – diagonal length of the inner hole's bounding box
Return: 0: invalid inner hole; 1: success
….....

Int **SCLHoleManage_GetOutHoleInfor**(Int holeID, char** holeName, Int** holeEdgeIDs, Int* holeEdgeCount, Float* size, Int* bFilled)
Purpose: After analysis, get the out hole geometry information
Input: holeID – the out hole's ID
Output: holeName – the out hole's name
holeEdgeIDs – edges' ID of the out hole
holeEdgeCount – number of edges from the out hole
size – diagonal length of the inner hole's bounding box
bFilled – out hole filled tag (some large out hole should not be filled)

Return: 0: invalid out hole; 1: success

….....

Int **SCLHoleManage_FillHole**(Int bInnerHole, Int holeID)
Purpose: After analysis, fill specified inner or out hole
Input: bInnerHole – tag of inner hole or out hole
holeID – the hole's ID
Return: 0: invalid out hole; 1: success

….....

void **SCLHollowManage_Analysis**(Int bSimpleHollowOnly)
Purpose: Start analysis hollow in geometry shapes
Input: bSimpleHollowOnly – a tag to check simple or complex hollow

….....

void **SCLHollowManage_AnalysisShape**(Int id, Int type, Int bSimpleHollowOnly)
Purpose: Start analysis hollow in geometry shell or solid
Input: id – the shell or solid shape's ID
type – the shape's type
bSimpleHollowOnly – a tag to check simple or complex hollow

….....

Int **SCLHollowManage_GetHollowCount**()
Purpose: After analysis, get number of hollow
Return: number of hollow

….....

Int **SCLHollowManage_GetHollowInfor**(Int hollowID, char** hollowName, Int** hollowFaceIDs, Int* holeFaceCount, Float* size)
Purpose: After analysis, get the hollow geometry information
Input: hollowID – the hollow's ID
Output: hollowName – the hollow's name
hollowFaceIDs – faces' ID of the hollow
holeFaceCount – number of faces from the hollow
size – diagonal length of the hollow's bounding box
Return: 0: invalid hollow; 1: success

….....

Int **SCLHollowManage_FillHollow**(Int hollowID)
Purpose: After analysis, fill one hollow

Input: hollowID – the hollowID's ID

Return: 0: failed; 1: success

….....

Int **SCLHollowManage_FillAll**()
Purpose: After analysis, fill all hollows
Return: 0: failed; 1: success

….....

Int **SCLSetDBEntityColor**(Int ID, Int type, Float* color)
Purpose: Set entity's color
Input: ID – the entity' ID
type – the entity' type
color – the color array (size 4, the last component is transparency)
Return: 0: failed; 1: success

….....

Int **SCLGetDBEntityColor**(Int ID, Int type, Float* color)
Purpose: Get entity's color
Input: ID – the entity' ID
type – the entity' type
Output: color – the color array (size 4, the last component is transparency)
Return: 0: failed; 1: success

LS-PrePost Scripting Command Language specifics and limitations

LSPP-SCL is almost like the C programming language with the following exceptions:

1. Combined assignments such as i++, i--, --i, ++i, i+=, i*=; are not supported, must use i=i+1; i=i-1; i=i+n; i=i*x; i=i/n;
2. For integer data declaration, you must use "Int" not "int".
3. For floating point number declaration, you must use "Float", not "float".
4. Do not type cast data conversion, e.g. Int i; Float x;
   i = x; (correct way), i = (Int)x; (not supported)

5. Switch case: do... while - not supported
6. Conditional operator: (boolean) ? : - not supported

How to use Scripting Command Language in LS-PrePost

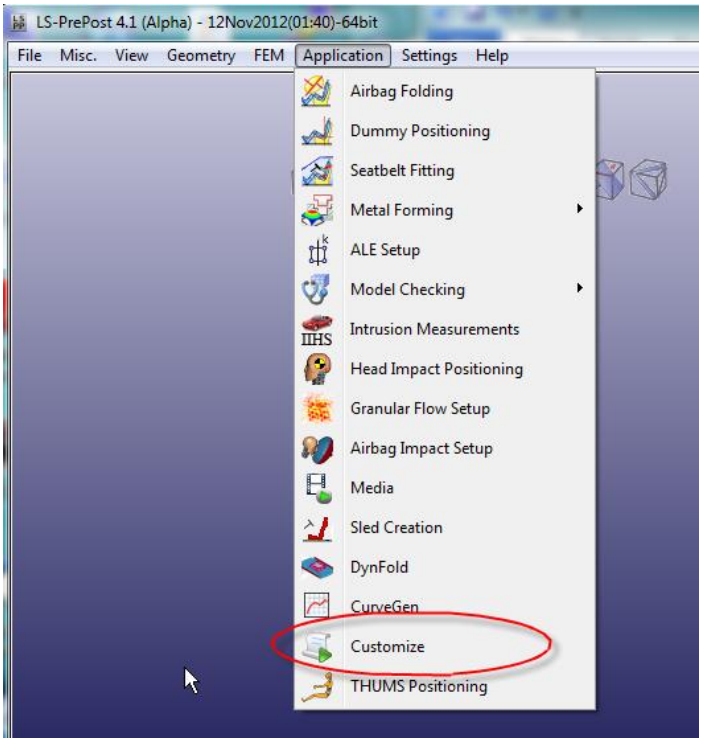
There are 2 ways to execute the scripting command language file:
1. Run it with the regular LS-PrePost command, or within the command file, use the runscript command to execute the scl file, parameters can also be passed to the script.

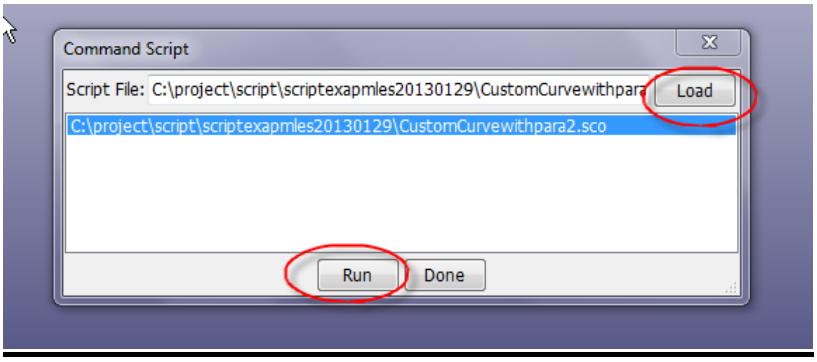
The syntax:
runscript "sclfilename" optional parameters

Example: the following command file will execute the script that creates a X-Y curve with the parameters defined in the command file.

```
parameter  pa 9.0E+07
parameter  pb 7000.0
parameter  pc  4.0E+07
parameter  npt  300
parameter  xmin  0.0
parameter  xmax  0.00126
runscript "customcurve.scl"  &npt &pa &pb &pc &xmin &xmax
```

2. Run it by going to the Application pull down menu, select "Customize" and in the pop up dialog, click "Load" to load the SCL file, then click "Run" to execute. Running script this way parameter cannot be passed to the script file, as shown in the following pictures:





Python API Functions

LsPrePost module:

def **execute_command**(cmd)

pass

Purpose: Execute a LS-PrePost command
Input: cmd - a string contains the LS-PrePost command
Return: none

…….

def **echo**(string)

pass

Purpose: Display the text in the LS-PrePost message dialog and in the lspost.msg file
Input: string - text string
Output: none
Return: none

…….

def **switch_state**(ist)

pass

Purpose: Switch the current state to a specified state
Input: ist - state number, 0 < ist <= largest state
Output: none
Return: flag, 1=success, 0=fail

…….

def **fringe_dc_to_model**(typecode, avg_opt, num, data, ist, label)

pass

Purpose: Fringe the data center array to current model.
Input: typecode - Node or element type, constant such as "NODE", "0","SOLID","BEAM","SHELL","TSHELL","SPHNODE" can be used. (**from DataCenter import Type**)
avg_opt – nodal averaging option, 0=none, 1=nodal
num - array size
data - Float array
ist - State number which data will be assigned
Label - Name of the fringing data to be shown on fringe plot
Output: none
Return: none

…….

def **save_dc_to_file**(filename, num, data)

pass

Purpose: Save the data center array to file.
Input: filename - name of output file.
num - array size
data - Float array
Output: none
Return: none
….....

def **cmd_result_get_value_count**()

pass

Purpose: Get number of results from a LS-PrePost command.
Input: none
Output: none
Return: Number of command results.
….....

def **cmd_result_get_value**(i)

pass

Purpose: Get value of command results.
Input: i - Index of command results. (starting from 0)
Output: depends on the data type, one of the following will be used
the integer result
the floating point result in double word.
Return: status flag, 1=success, 0=fail
….....

def **check_if_part_is_active_u**(uid)

pass

Purpose: Check if a part is active (visible) given a user defined part id
Input: uid - User id.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

def **check_if_part_is_active_i**(iid)

pass

Purpose: Check if a part is active (visible) given an internal part id.
Input: iid - internal id.
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

def **check_if_element_is_active_u**(uid, type)

pass

Purpose: Check if an element is active (visible) given an users element id.
Input: uid - User id.
type - Data type, constant such as SHELL, SOLID, TSHELL, BEAM, SPHNODE can be used(**from DataCenter import Type**).
Output: none
Return: visibility flag, 1 is visible, 0 is invisible
….....

def **check_if_element_is_active_i**(iid, dtype)

pass

Purpose: Check if an element is active (visible) given an internal id.
Input: iid - Internal id.
type - Data type, constant such as SHELL, SOLID, TSHELL, BEAM, SPHNODE can be used(**from DataCenter import Type**).
Output: none
Return: visibility flag, 1 is visible, 0 is invisible.
….....

DataCenter module:

def **get_data**(parameter_name, type=-1, id=-1, ipt=-999, ist=-1)

pass

Purpose: Get data from model.
Input: parameter_name(like “part_name”, “time”).
Keyword arguments(ignore if not necessary):

1. type - Data type, constant such as NODE, PART, SHELL, SOLID, TSHELL, BEAM, SPHNODE can be used(**from DataCenter import Type**). If the parameter_name "`elemofpart_ids`" is used, type=0 means to get the internal element id array.
2. id - element/part/nodeset/elementset id.
3. ipt - Integration points or layer. Valid for getting component values from element shell, beam and tshell(**from DataCenter import Ipt**), such as "MEAN", "UPPER", "LOWER" can be used. Also valid for solid fully integrated, base-1,such as "1","2"..."8" can be used.
4. ist - State number which data will be extracted (starting from 1)

Return: result

……

```
class Type(Enum):
    PART = 0
    BEAM = 1
    SHELL = 2
    SOLID = 3
    TSHELL = 4
    SPHNODE = 11
    NODE = 14

class Ipt(Enum):
    MAX = -4
    UPPER = -3
    LOWER = -2
    MIDDLE = -1


class Vector():
    def x(self):
        pass
    def y(self):
        pass
    def z(self):
```

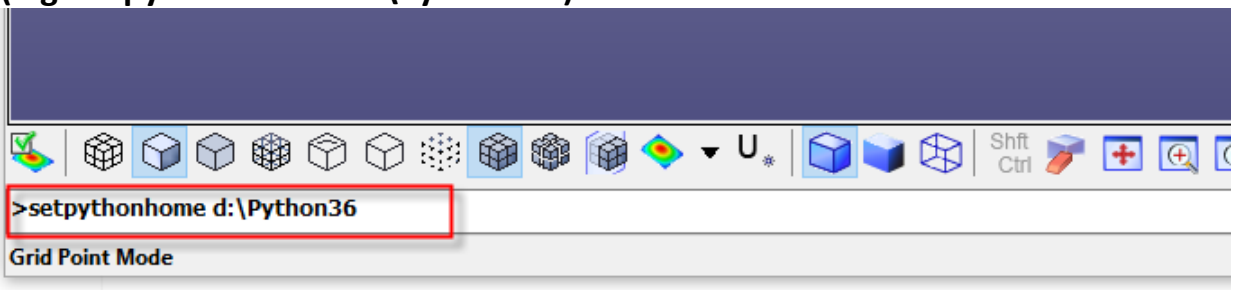
```
        pass


class Tensor():
    def x(self):
        pass
    def y(self):
        pass
    def z(self):
        pass
    def xy(self):
        pass
    def yz(self):
        pass
    def zx(self):
        pass
```

……

How to use Python Scripting in LS-PrePost

Download (from official website) and install Python on your machine, please note that the *Python3.6* is required for LS-PrePost4.9 and earlier version, the *Python3.10* is required for LS-PrePost4.10 and newer version,
When running the Python script the first time, one should issue the following command in LS-PrePost command input window.

setpythonhome "python_home_directory"
(e.g. setpythonhome "D:\Python36")



The Python home path will be automatically saved to the config file.

And then run Python scripting with the regular LS-PrePost command, or within the command file, use the runpython command to execute the Python scripting, parameters can also be passed to the script.

The syntax:

runpython "pythonscriptingname" optional parameters

Example: the following command file will execute the script that creates a X-Y curve with the parameters defined in the command file.

```
parameter  pa 9.0E+07
parameter  pb 7000.0
parameter  pc  4.0E+07
parameter  npt  300
parameter  xmin  0.0
parameter  xmax  0.00126
runpython "customcurve.py"  &npt &pa &pb &pc &xmin &xmax
```

Data Center Parameter Name list

Name	Return Type	Status
num_states	Int	Available
num_parts	Int	Available
num_nodes	Int	Available
num_elements	Int	Available
num_materials	Int	Available
num_eos	Int	Available
largest_node_id	Int	Available
largest_element_id	Int	Available

num_shell_elements	Int	Available
num_beam_elements	Int	Available
num_solid_elements	Int	Available
num_tshell_elements	Int	Available
num_sph_elements	Int	Available
num_discrete_elements	Int	Available
num_seatbelt_elements	Int	Available
num_mass_elements	Int	Available
num_inertia_elements	Int	Available
num_validparts	Int	Available
num_beam_intp	Int	Available
num_active_elements	Int	Available
largest_point_id	Int	Available
largest_vertex_id	Int	Available
largest_edge_id	Int	Available
largest_surface_id	Int	Available
partofelem_id	Int	Available
current_state	Int	Available
num_selection	Int	Available
is_full_integrated	Int	Available
xyplot_numpopupwin	Int	Available
xyplot_numcurves	Int	Available
node_ids	Int array	Available

ids_inset	Int array	Available
element_ids	Int array	Available
elemofpart_ids	Int array	Available
validpart_ids	Int array	Available
selection_ids	Int array	Available
selection_types	Int array	Available
partofmat_ids	Int array	Available
material_ids	Int array	Available
eos_ids	Int array	Available
element_connectivity	Int array	Available
active_elements_ids	Int array	Available
largest_time	Float	Available
largest_disp_magnitude	Float	Available
max_stress_x	Float	Available
max_stress_y	Float	Available
max_stress_z	Float	Available
max_stress_xy	Float	Available
max_stress_yz	Float	Available
max_stress_zx	Float	Available
max_strain_x	Float	Available
max_strain_y	Float	Available
max_strain_z	Float	Available
max_strain_xy	Float	Available

max_strain_yz	Float	Available
max_strain_zx	Float	Available
xyplot_maxvalue	Float	Available
xyplot_minvalue	Float	Available
xyplot_lastvalue	Float array	Available
state_times	Float array	Available
nodal_temperatures	Float array	Available
node_x	Float or float array	Available
node_y	Float or float array	Available
node_z	Float or float array	Available
disp_x	Float or float array	Available
disp_y	Float or float array	Available
disp_z	Float or float array	Available
disp_magnitude	Float or float array	Available
state_node_x	Float or float array	Available
state_node_y	Float or float array	Available
state_node_z	Float or float array	Available
velo_x	Float or float array	Available
velo_y	Float or float array	Available
velo_z	Float or float array	Available
velo_magnitude	Float or float array	Available
accel_x	Float or float array	Available
accel_y	Float or float array	Available

accel_z	Float or float array	Available
accel_magnitude	Float or float array	Available
stress_x	Float or float array	Available
stress_y	Float or float array	Available
stress_z	Float or float array	Available
stress_xy	Float or float array	Available
stress_yz	Float or float array	Available
stress_zx	Float or float array	Available
effective_plastic_strain	Float or float array	Available
historyvar	Float array	Available
stress_1stprincipal	Float or float array	Available
stress_2ndprincipal	Float or float array	Available
stress_3rdprincipal	Float or float array	Available
strain_x	Float or float array	Available
strain_y	Float or float array	Available
strain_z	Float or float array	Available
strain_xy	Float or float array	Available
strain_yz	Float or float array	Available
strain_zx	Float or float array	Available
strain_1stprincipal_infin	Float or float array	Available
strain_2ndprincipal_infin	Float or float array	Available
strain_3rdprincipal_infin	Float or float array	Available
lower_eps1	Float array	Available

upper_eps1	Float array	Available
mean_eps1	Float array	Available
lower_eps2	Float array	Available
upper_eps2	Float array	Available
mean_eps2	Float array	Available
sigma1	Float array	Available
sigma2	Float array	Available
mx	Float or float array	Available
my	Float or float array	Available
mxy	Float or float array	Available
qx	Float or float array	Available
qy	Float or float array	Available
nx	Float or float array	Available
ny	Float or float array	Available
nxy	Float or float array	Available
Nx/t-6*Mx/(t*t)	Float or float array	Available
Nx/t+6*Mx/(t*t)	Float or float array	Available
Ny/t-6*My/(t*t)	Float or float array	Available
Ny/t+6*My/(t*t)	Float or float array	Available
Nxy/t-6*Mxy/(t*t)	Float or float array	Available
Nxy/t+6*Mxy/(t*t)	Float or float array	Available
strain_energy_density	Float or float array	Available
Internal_energy_density	float array	Available

kinetic_energy	Float or float array	Available
internal_energy	Float or float array	Available
total_energy	Float or float array	Available
rigidbody_dispx	Float or float array	Available
rigidbody_dispy	Float or float array	Available
rigidbody_dispz	Float or float array	Available
result_rigidbody_disp	Float or float array	Available
rigidbody_velx	Float or float array	Available
rigidbody_vely	Float or float array	Available
rigidbody_velz	Float or float array	Available
result_rigidbody_vel	Float or float array	Available
rigidbody_accelx	Float or float array	Available
rigidbody_accely	Float or float array	Available
rigidbody_accelz	Float or float array	Available
result_rigidbody_accel	Float or float array	Available
von_mises	Float or float array	Available
thickness	Float or float array	Available
area	Float or float array	Available
volume	Float or float array	Available
shell_normal	Vector	Available
displacement	Vector or vector array	Available
velocity	Vector or vector array	Available
acceleration	Vector or vector array	Available

global_stress	Tensor or tensor array	Available
global_strain	Tensor or tensor array	Available
axial_force	Float or Float array	Available
s_shear_resultant	Float or Float array	Available
t_shear_resultant	Float or Float array	Available
s_bending_moment	Float or Float array	Available
t_bending_moment	Float or Float array	Available
torsional_resultant	Float or Float array	Available
axial_stress	Float or Float array	Available
rs_shear_stress	Float or Float array	Available
tr_shear_stress	Float or Float array	Available
plastic_strain	Float or Float array	Available
axial_strain	Float or Float array	Available
strain_maxprincipal	Float or Float array	Available
strain_2ndprincipal	Float or Float array	Available
strain_minprincipal	Float or Float array	Available
x_heatflux	Float or Float array	Available
y_heatflux	Float or Float array	Available
z_heatflux	Float or Float array	Available
heatflux_magnitude	Float or Float array	Available
internal_energy_density	Float or Float array	Available
material_internal_energy	Float or Float array	Available
material_rigidbody_velx	Float or Float array	Available

material_rigidbogy_vely	Float or Float array	Available
material_rigidbogy_velz	Float or Float array	Available
material_result_rigidbody_vel	Float or Float array	Available
part_name	String	Available
time	String	Available
elementdeletion	Float	Available
user_id	int	Available for Python
internal_id	int	Available for Python
inquiry_part_type_u	int	Available for Python
inquiry_part_type_i	int	Available for Python
model_directory	String	Available for Python
num_set_segment_id	Int	Available
set_segment_id	Int array	Available
maxnum_set_segmentdata_inset	Int	Available
set_segmentdata_inset	Int array Input parameter: set internal id from 1.	Available
ids_inset	Int array Input parameter: Type: PART, SHELL,	Available

	NODE, SOLID, BEAM Set internal id from 1	

Examples:

The examples can be download from the LSTC ftp site:

ftp://ftp.lstc.com/outgoing/lsprepost/SCLexamples/SCL_Examples.zip

As of June, 2020, there are 11 example scripts:

1. Example 1:
Script to get no. of parts in the model. Get all the part IDs, then draw each part by itself and auto center it for each part, capture a picture in png format, and save it to a file which has the part id as the file name.

2. Example 2:
Script to create a plate with 25 shell elements, then extract the following:
1. number of nodes/elements in the model,
2. largest node/element ids,
3. the array of the node ids.
4. get the element connectivity for the last element

3. Example 3:
Script to create a load curve based on a given equation and some parameters, the script will be called by a command file example3.cfile which passes the parameters to the script, the created curve will be written to a file called curve.txt, then load the file back to display in the xy-plot plot interface as a XY graph

4. Example 4:
Script to measure the mass, mass center of gravity and volume of all solid parts in the model, the measured information will be written to file exam4.txt.

Example 4a:
Script to measure the angular velocity, of all solid parts in the model, the measured information will be written to file exam4a.txt.

5. Example 5:

Script to extract the x, y, and z components of the displacement array, then compute the resultant displacement for all the nodes and then fringe the computed result, also write the computed result to a file for each state. The file written can be loaded back into LSPP as User defined fringe data.

6. Example 6:
Script to get x, y, z, global stress components and compute the average stress, then fringe the computed result and write it out to a file.

7. Example 7:
Script to extract the z component of the nodal displacement array, then differentiate it with respect to time, which should give the z velocity array, then extract the z component of the velocity array that was stored in d3plot file and then compute the difference between differentiated result with stored result and then fringe it.

8. Example 8:
Script to extract MX, MY, MXY, QX, QY, NX, NY, NXY resultant forces at the last state for Shell elements from a set of d3plot files, and write the extracted data out to a file

9. Example 9:
Script to look up number of parts in a model, get the part IDs, for each active part, measure the volume of the part by issuing a "Measure Vol part" command, and obtain the results from the command, then write out the return values from the measure command to a file call postdata.txt.

10. Example 10:
Script to read a file that contains nodal coordinates which define the outline of a region on the XY plane. Then create a geometry surface from the outline, and then mesh it with shell elements, drag the shell elements in the Z direction to form a solid block. Delete the shell element part, and keep the solid part, write the solid part to a file. This example uses a LS-PrePost command file (example10.cfile) to call the SCL file, with the input file, output file and a few parameters defined in the command file and pass them to the script.

11. Example 11:
Script to write the nodal coordinate from the selection buffer to a file. The file name is passed through the runscript/runpython command line. This example

demonstrates how to pass a string from command line to the script. Also demonstrates how to get items in the selection buffer.