

## July 21, 2025 - Release 0.1.86

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1. BinoutReader: Fixed checking directory name problem for every branch.
2. BinoutReader: Fixed problem of reading BINOUT\_ABSTATCPG\_NPARTICLES in abstat\_cpg branch.

## July 16, 2025 - Release 0.1.85

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1. BinoutReader: Add BINOUT\_ABSTATCPG\_ID\_BAG and BINOUT\_ABSTATCPG\_ID\_PART for python API

## July 10, 2025 - Release 0.1.84

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1. BinoutReader: Support for abstat\_cpg branch.
2. BinoutReader: Fixed solid hist branch bug.

## May 30, 2025 - Release 0.1.83

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1. BinoutReader: Fixed empty TRHIST data from binout using lsreader.

## April 11, 2025 - Release 0.1.82

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1. Update femunzip libraries to 17.1.901

## March 28, 2025 - Release 0.1.81

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1. BinoutReader: Support BINOUT\_SBTOUT\_RING\_FORCEBELT1, BINOUT\_SBTOUT\_RING\_FORCEBELT2, BINOUT\_SBTOUT\_RING\_WARPANG\_THET

## February 5, 2025 - Release 0.1.80

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1. Fix bug: d3plot was mistakenly assumed to be the interface force file.

## January 15, 2025 - Release 0.1.79

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1. Support ISPG.
2. Support CPM,MS,SPH,DES ,sort-array,intfor and NVH related files for DP version.
3. BinoutReader: Add testing data rcforc no data.
4. BinoutReader: Fixed rcforc no data only metadata directory brings bug of endless loop.

## August 23, 2024 - Release 0.1.78

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1. Support SPH and sort-array for DP version
2. Support intfor and NVH related files for DP version
3. Support DES for DP version
4. d3lsda: fix bug in reading node data

## June 26, 2024 - Release 0.1.77

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1. Support CPM, MS for DP version

## April 29, 2024 - Release 0.1.76

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MS: support the d3plot from the solver: CESE 2D axisym CFD

## April 23, 2024 - Release 0.1.75

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1. Fix bug about d3lsda, importing error and fringe stress error
2. Fix bug about d3lsda: D3P\_SOLID\_EFFECTIVE\_PLASTIC\_STRAIN
3. Fix bug about MS
4. Fix bug about getting d3p\_control for double version
5. Fix bug in getting D3P\_SHELL\_CONNECTIVITY\_MAT from double version
6. Fix bug in getting D3P\_ALL\_DELETION from double version
7. ReadControl: handle the case of ioshl[i]=0 instead of 1000

## March 6, 2024 - Release 0.1.74

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1. Fix bug about thermal it option
2. FemzipReader: free point when error return.
3. hdf5: fix bug about adaptive model
4. FemzipReader: fixed the problem when calling deletion APIs. It's better in state num loop to finish reading the deletion related which is the femzip API rules, or the efficient problem.

## September 7, 2023 - Release 0.1.73

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1. Fix bug in getting D3P\_NODE\_COORDINATES if there exists rigid body data.
2. Fix bug: read nodal velocity with model having rigid body compression data.
3. Fix libraries link bug

## August 8, 2023 - Release 0.1.72

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1. support python311(for now, lsreader supports python36, python37, python38, python39, python310, python 311)
2. update hdf5
3. fix bug of ms
4. add D3P\_HAS\_INF
5. improve the efficiency of extracting data by part

## May 27, 2023 - Release 0.1.71

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1. hdf5: use vonmises reduction to deal with stress and strain only
2. fix bug about ms of solid 20 and solid27

## March 23, 2023 - Release 0.1.70

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1. add D3P\_HAS\_INF

## March17, 2023 - Release 0.1.69

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1. BinoutReader: fix bug of cannot read properly BINOUT\_RCFORC\_TIE\_COUNT.
2. FemzipReader: Add the license related libs which can access the extended femzip lib.
3. support hdf5

4. BINOUT\_ELOUT\_YIELD is only available in the idtype = BINOUT\_ELOUT\_ID\_SOLID.
5. support using cache by part
6. fix bug about by part
7. speed up of writing hdf5
8. BinoutReader: support for the ipt selection of sigma\_xx and plastic\_eps components in the elout/beam branch.
9. Add callback of writing hdf5
10. update interface force.

## February 3, 2023 - Release 0.1.68

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1. BinoutReader: Add abstat\_cpm2bag.binout0000.
2. BinoutReader: support for searching the part\_id's bag index if the bag id is not be set in parameter.
3. BinoutReader: add parameter description to document.
4. BinoutReader:fix python and c wrapper problem, the keyword arg of "stateindex".
5. BinoutReader: fix autocode related codes.
6. BinoutReader: Add the multiple ipt in elout branch testing file.
7. BinoutReader: support for the new format elout branch.
8. fix bug about part variables when there are rigid bodies
9. BinoutReader: fix offset error on all data fetched from "subsystem\_inertia\_info".Data fetched are always fetched from last systemid.
10. BinoutReader: Add elout beam ipts testing file.
11. BinoutReader: fix failing call with BINOUT\_ELOUT\_NUM\_IPT and p.idtype = BINOUT\_ELOUT\_ID\_BEAM.

## December 15, 2022 - Release 0.1.67

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1. BinoutReader: support for new components of BINOUT\_ABSTATCPM\_ENHANCE\_VENT, BINOUT\_ABSTATCPM\_LEAK\_ENERGY, BINOUT\_ABSTATCPM\_PART\_TEMP, BINOUT\_ABSTATCPM\_POR\_VOLUME,BINOUT\_ABSTATCPM\_PRES\_PARTICLE.
2. BinoutReader: fix problem of elout beam dynamic ids for every state.
3. BinoutReader: support for sphvicinity branch.

## December 1, 2022 - Release 0.1.66

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1. BinoutReader: Add dem\_rcforc.binout
2. BinoutReader: fix crashing on reading BINOUT\_SPHOUT\_NUMBER\_OF\_NEIGHBORS,
3. BinoutReader: fix program hangs while reading BINOUT\_DEMECFORC\_NUM\_TIMESTEP.
4. BinoutReader: support for the new components of BINOUT\_DEMRCFORC\_TOTAL\_FORCE, BINOUT\_DEMRCFORC\_MOMENT\_X, BINOUT\_DEMRCFORC\_MOMENT\_Y, BINOUT\_DEMRCFORC\_MOMENT\_Z,BINOUT\_DEMRCFORC\_TOTAL\_MOMENT,BINOUT\_DEMRCFORC\_MASS
5. add D3P\_BEAM\_INTERNAL\_ENERGY\_DENSITY and D3P\_NODE\_KINETIC\_ENERGY\_DENSITY

## October 14, 2022 - Release 0.1.65

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1. fix bug about D3P\_NODE\_DISPLACEMENT and D3P\_NODE\_COORDINATES
2. fix bug: read displacement data
3. fix wrapper bugs of binoutreader
4. support for getting legend ids and legend string
5. support for set legend API to plot curve of binoutreader
6. fix bug about d3lsda compress
7. update d3lsda for reduction by mat group
8. fix bug of extracting BINOUT\_ABSTATCPM\_INFLATOR\_E
9. support for chamber\_data/num\_particle
10. support for "bag\_data/heat\_convection"
11. support flux and pleak in dbfsi branch
12. support parameter part id in abstat\_cpm branch
13. support the ABSTATCPM\_SPECIES, if the species id is 0, that means air
14. fix BINOUT\_DBBEMAC\_X no need id parameter

## August 16, 2022 - Release 0.1.64

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1. BinoutReader: improve the example.py and document.
2. add BINOUT\_BNDOUT\_RESULTANT\_FORCE
3. add  
D3P\_HAS\_RAW\_NODE\_COORDINATES  
D3P\_HAS\_RAW\_NODE\_DISPLACEMENTS  
D3P\_NODE\_DISPLACEMENTS

## August 3, 2022 - Release 0.1.63

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1. fix bug about D3P\_HAS\_HEAT\_FLUX
2. update ms variables, add 1042, 1043, 1044, 1045, 1046, 1047, 1048
3. change file to d3max if name includes "d3max" in d3spcm

## July 1, 2022 - Release 0.1.62

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1. BinoutReader: fix potential problems in NumTimeStep.
2. BinoutReader: fix wrapper c problem and add test.
3. BinoutReader: add spforc test.
4. add the return code for d3lsda.
5. Fix bug: close d3plot files in case they are idle.

## June 20, 2022 - Release 0.1.61

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1. MS: Change label from "Magnetic" field to B field.
2. fix the bug of encapsulating to python.
3. support up to 8168 files open simultaneously.
4. update ms: support inquiry structural type when ms data is on structural element.
5. add D3P\_MS\_DATA\_IS\_ON\_STRUCTURE\_NODE.

6. update lsreaderPro.py to fix bug when calculating nodal average value.
7. support inquiry for d3part and d3max.

## **June 8, 2022 - Release 0.1.60**

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1. Support for getting stone wall energy related components value.
2. Support for dbbemac branch.
3. Support for icvout branch.
4. Support for BINOUT\_TRHIST\_PRESSURE.
5. re-implement BINOUT\_TRHIST\_NUM\_ID and BINOUT\_TRHIST\_IDS replace of BINOUT\_TRHIST\_NUM\_TRACER and BINOUT\_TRHIST\_TRACERS.

## **May 10, 2022 - Release 0.1.59**

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1. Fix bug about reading d3plot with adaptive data.

## **April 15, 2022 - Release 0.1.58**

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1. Fix bug about binoutreader enumeration name
2. Fix bug about soft link file on Linux

## **March 26, 2022 - Release 0.1.57**

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1. Improvements of the process of opening file(add return state).
2. Fix bug: one state occupies one more d3plot files

## **March 7, 2022 - Release 0.1.56**

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1. transfer the changes from LSPP to speed up the reader in case there exists a large number of d3plot files.

## **March 1, 2022 - Release 0.1.55**

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1. fix bug about fsi interface force file
2. add D3P\_FTG\*\*\*EXPECTED\_FATIGUE\_CYCLES

## **February 24, 2022 - Release 0.1.54**

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1. add D3P\_FTG\*\*\*EXPECTED\_FATIGUE\_CYCLES

## **February 10, 2022 - Release 0.1.53**

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1. fix bug about D3P\_NODE\_\*\*\*.
2. update documents.

## **January 18, 2022 - Release 0.1.52**

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1. fix bug about interface force.

## **January 10, 2022 - Release 0.1.51**

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1. fix bug about shell data for rigid body case 2.

## **December 28, 2021 - Release 0.1.50**

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1. fix free memory bug.
2. fix bug about adaptive model.
3. fix bug about ale.

## **December 13, 2021 - Release 0.1.49**

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1. fix bug about D3P\_XXX\_ELEMENT\_CENTROID
2. BinoutReader: support for tprint branch new components.
3. BinoutReader: support for the temperature max, min, norm for state index.
4. fix bug about d3lsda
5. update the type to LSR\_\*\*\*
6. support rigid body coordinates, velocities, accelerations

## **November 19, 2021 - Release 0.1.48**

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1. improvements about d3lsda.
2. fix bug about rigid body data with adaptivity.

## **October 22, 2021 - Release 0.1.47**

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1. update the message of writing d3lsda file.
2. support compressing for d3lsda file.
3. fix the dynamic ids with state problem for binoutreader.
4. fix bug about des data from old format.

## **October 8, 2021 - Release 0.1.46**

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1. support for elout strain dev(R13) version format
2. fix bug about lsda

## **September 24, 2021 - Release 0.1.45**

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1. add femzip in femzip version.

## **September 17, 2021 - Release 0.1.44**

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1. remove femzip in regular version

## **September 13, 2021 - Release 0.1.43**

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1. fix bug about MS, remove "quality index factor"
2. add inquiry API of femzip file

## August 31, 2021 - Release 0.1.42

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1. fix bug about ale
2. fix bug about getting elout history var data

## August 18, 2021 - Release 0.1.41

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1. fix bug about femzip files
2. fix bug when there are both 3d element and 2d element for ale database
3. fix bug about python wrapper
4. fix bug about history number for ale database
5. ignore ipt now that all ale database only have one integrated point

## August 10, 2021 - Release 0.1.40

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1. support string ndarray in binoutreader
2. add D3P\_2D\_ALE\_HAS\*
3. add D3P\_HAS\*STRAIN\_RATE
4. fix bug about the crash of inquire APIs of SPH
5. fix bug about D3P\_ALE\_HAS\_SPECIES\_MASS(D3P\_2D\_ALE\_HAS\_SPECIES\_MASS)

## August 2, 2021 - Release 0.1.39

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1. add  
D3P\_2D\_ALE\_DENSITY  
D3P\_2D\_ALE\_VOLUME\_FRACTION  
D3P\_2D\_ALE\_DOMINANT\_MATERIAL  
D3P\_2D\_ALE\_SPECIES\_MASS  
support 2d ale database

## July 28, 2021 - Release 0.1.38

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1. improve d3lsdareader and d3lsdawriter
2. add D3P\_XXX\_SIGNED\_VON\_MISES\_STRAIN

## June 24, 2021 - Release 0.1.37

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1. Add D3P\_XXX\_1ST\_PRINCIPAL\_STRESS, D3P\_XXX\_2ND\_PRINCIPAL\_STRESS, D3P\_XXX\_3RD\_PRINCIPAL\_STRESS and D3P\_XXX\_TRESCA\_STRESS for shell, solid, tshell, sph.

2. Add D3P\_XXX\_MAX\_PRINCIPAL\_STRAIN, D3P\_XXX\_2ND\_PRINCIPAL\_STRAIN, D3P\_XXX\_MIN\_PRINCIPAL\_STRAIN and D3P\_XXX\_TRESCA\_STRAIN for shell, solid, tshell, sph.

## June 17, 2021 - Release 0.1.36

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1. support femzip on Windows.
2. support by part for Infinitesimal strains, Green strains, Almansi strains and strain rate.
3. add D3P\_XXX\_VON\_MISES\_STRAIN, D3P\_XXX\_SIGNED\_VON\_MISES\_STRESS.

## June 4, 2021 - Release 0.1.35

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1. support Infinitesimal strains, Green strains, Almansi strains and strain rate for solid, shell, thell
2. improve d3lsda
3. fix bug about D3P\_USER\_NUMBER\_ALL\_DATA

## May 13, 2021 - Release 0.1.34

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1. fix bug about ipartset\_user
2. improve d3lsdawriter and d3lsdareader

## May 6, 2021 - Release 0.1.33

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1. Fix bug about D3P\_TITLE
2. Fix bug about D3P\_CPM\_GEOM\_DATA
3. Add i\_rigid\_body in D3P\_Init and D3P\_Reset for C version
4. improve d3lsdawriter and d3lsdareader

## April 23, 2021 - Release 0.1.32

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1. BinoutReader: fix bug about BINOUT\_RWFOR\_IDS.
2. support fsifor file.

## April 14, 2021 - Release 0.1.31

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1. binoutreader: support for the rwforc wall branch format data and fix the wrapper force id to python problem.
2. fix bug about nodout\_ssd caused by different dyna version.
3. fix bug about D3P\_HAS\_PART\_TITLE/D3P\_HAS\_PART\_NAME/D3P\_HAS\_PART\_NAME\_STRUCT.
4. Add C API for d3lsda format file.
5. Improve d3lsda writer and reader(add some enumerations).

## March 29, 2021 - Release 0.1.30

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1. Support binout->rcforc->moment.
2. Support d3thdt(shell solid beam).
3. Add patch to handle ANSA's model.
4. Fix bug: handle model with more than 100 million elements.
5. Support BINOUT\_RCFORC\_RESULTANT\_FORCE

## March 6, 2021 - Release 0.1.29

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1. Fix bug: extract multisolver state data.
2. Fix bug: extract sph connectivity with rigid body data.
3. Fix bug: extract stress of elout branch.

## March 4, 2021 - Release 0.1.28

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1. fix bug about MS timesteps.
2. support date==0 as the general d3plot file type.

## March 3, 2021 - Release 0.1.27

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1. fix bug about MS.
2. fix bug about beam connectivity.
3. update MS APIs, add:
  - D3P\_MS\_DOMAIN\_HAS\_PART\_NAME,
  - D3P\_MS\_DOMAIN\_HAS\_PART\_MAT,
  - D3P\_MS\_DOMAIN\_HAS\_PART\_IDS,
  - D3P\_MS\_DOMAIN\_HAS\_NODE\_IDS,
  - D3P\_MS\_DOMAIN\_HAS\_ELEM\_IDS,
  - D3P\_MS\_DOMAIN\_NUM\_PART,
  - D3P\_MS\_DOMAIN\_PART\_MAT,
  - D3P\_MS\_DOMAIN\_PART\_IDS,
  - D3P\_MS\_DOMAIN\_IS\_ADAPTIVE,
  - D3P\_MS\_DOMAIN\_NUM\_NODE,
  - D3P\_MS\_DOMAIN\_NODE\_IDS,
  - D3P\_MS\_DOMAIN\_NUM\_NODE\_ON\_SURFACE,
  - D3P\_MS\_DOMAIN\_NODE\_IDS\_ON\_SURFACE,
  - D3P\_MS\_DOMAIN\_NODE\_COORDINATES,
  - D3P\_MS\_DOMAIN\_NUM\_ELEM,
  - D3P\_MS\_DOMAIN\_ELEM\_IDS,
  - D3P\_MS\_SOLID\_CONNECTIVITY\_MAT,
  - D3P\_MS\_SHELL\_CONNECTIVITY\_MAT,
  - D3P\_MS\_BEAM\_CONNECTIVITY\_MAT,

## February 28, 2021 - Release 0.1.26

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1. Support d3thdt file, add:

D3T\_NUM\_STATES  
D3T\_TIMES  
D3T\_NUM\_SHELL  
D3T\_SHELL\_CONNECTIVITY\_MAT  
D3T\_SHELL\_IDS  
D3T\_NUM\_SHELL\_PLOT  
D3T\_SHELL\_IDS\_PLOT  
D3T\_SHELL\_MX\_HISTORY  
D3T\_SHELL\_MY\_HISTORY  
D3T\_SHELL\_MXY\_HISTORY  
D3T\_SHELL\_QX\_HISTORY  
D3T\_SHELL\_QY\_HISTORY  
D3T\_SHELL\_NX\_HISTORY  
D3T\_SHELL\_NY\_HISTORY  
D3T\_SHELL\_NXY\_HISTORY

## February 18, 2021 - Release 0.1.25

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1. fix bug when reading data from adaptive MS
2. Add inquiry API:

1. D3P\_FREQUENCY\_HAS\*\*\*
2. D3P\_HAS\_SOLID\_STRAIN
3. D3P\_HAS\_TSHELL\_STRAIN
4. D3P\_HAS\_SHELL\_STRAIN
5. D3P\_BEAM\_AXIAL\_FORCE
6. D3P\_HAS\_BEAM\_AXIAL\_FORCE
7. D3P\_HAS\_BEAM\_S\_SHEAR\_RESULTANT
8. D3P\_HAS\_BEAM\_S\_BENDING\_MOMENT
9. D3P\_HAS\_BEAM\_T\_BENDING\_MOMENT
10. D3P\_HAS\_BEAM\_TORSIONAL\_RESULTANT
11. D3P\_HAS\_PART\_IDS
12. D3P\_HAS\_GLOBAL\_KINETIC\_ENERGY
13. D3P\_HAS\_GLOBAL\_INTERNAL\_ENERGY
14. D3P\_HAS\_GLOBAL\_TOTAL\_ENERGY
15. D3P\_HAS\_GLOBAL\_VELOCITY
16. D3P\_HAS\_PART\_NAME
17. D3P\_HAS\_PART\_NAME\_STRUCT
18. D3P\_HAS\_PART\_INTERNAL\_ENERGY
19. D3P\_HAS\_PART\_KINETIC\_ENERGY
20. D3P\_HAS\_PART\_VELOCITY

21. D3P\_HAS\_PART\_MASS  
22. D3P\_HAS\_PART\_HOURLASS  
23. D3P\_HAS\_RIGID\_WALL\_FORCE  
24. D3P\_HAS\_RIGID\_WALL\_POSITION  
25. D3P\_HAS\_NODE\_IDS  
26. D3P\_HAS\_NODE\_MASS\_SCALING  
27. D3P\_HAS\_NODE\_TEMPERATURE\_DIVIDE\_TIME  
28. D3P\_HAS\_NODE\_RESIDUAL\_FORCE  
29. D3P\_HAS\_NODE\_RESIDUAL\_MOMENT  
30. D3P\_HAS\_NODE\_PENETRATION  
31. D3P\_HAS\_NODE\_RELATIVE\_PENETRATION  
32. D3P\_HAS\_NODE\_CONTACT\_ENERGY\_DENSITY  
33. D3P\_HAS\_SOLID\_IDS  
34. D3P\_HAS\_SOLID\_VON\_MISES\_STRESS  
35. D3P\_HAS\_SOLID\_PLASTIC\_STRAIN  
36. D3P\_HAS\_SOLID\_THERMAL\_STRAIN  
37. D3P\_HAS\_TSHELL\_IDS  
38. D3P\_HAS\_TSHELL\_VON\_MISES\_STRESS  
39. D3P\_HAS\_BEAM\_IDS  
40. D3P\_HAS\_SHELL\_IDS  
41. D3P\_HAS\_SHELL\_VON\_MISES\_STRESS  
42. D3P\_HAS\_SHELL\_PLASTIC\_STRAIN  
43. D3P\_HAS\_SHELL\_THERMAL\_STRAIN  
44. D3P\_HAS\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_1  
45. D3P\_HAS\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_2  
46. D3P\_HAS\_SPH\_RAIDUS  
47. D3P\_HAS\_SPH\_PRESSURE  
48. D3P\_HAS\_SPH\_STRESS  
49. D3P\_HAS\_SPH\_PLASTIC\_STRAIN  
50. D3P\_HAS\_SPH\_DENSITY  
51. D3P\_HAS\_SPH\_INTERNAL\_ENERGY  
52. D3P\_HAS\_SPH\_MASS  
53. D3P\_HAS\_SPH\_VON\_MISES\_STRESS  
54. D3P\_HAS\_SHELL\_THICKNESS  
55. D3P\_HAS\_SPH\_VON\_MISES\_STRESS  
56. D3P\_ALE\_HAS\_MATERIAL\_IDS  
57. D3P\_ALE\_HAS\_DENSITY  
58. D3P\_ALE\_HAS\_VOLUME\_FRACTION  
59. D3P\_ALE\_HAS\_DOMINANT\_MATERIAL  
60. D3P\_ALE\_HAS\_SPECIES\_MASS  
61. D3P\_HAS\_D3PLOT  
62. D3P\_EIGV\_NODE\_COORDINATES  
63. D3P\_EIGV\_NODE\_VELOCITIES  
64. D3P\_EIGV\_NODE\_ACCELERATIONS  
65. D3P\_EIGV\_NODE\_COORDINATES\_DOUBLE  
66. D3P\_EIGV\_NODE\_VELOCITIES\_DOUBLE  
67. D3P\_EIGV\_NODE\_ACCELERATIONS\_DOUBLE  
68. D3P\_EIGV\_NUM\_NODES

1. fix bug about disbout branch of binout

## February 3, 2021 - Release 0.1.23

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1. fix bug about shell strain.

## February 1, 2021 - Release 0.1.22

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1. Add  
D3P\_HAS\_EIGV,  
D3P\_FTG\_HAS\_SOLID\_VARIABLES,  
D3P\_FTG\_HAS\_TSHELL\_VARIABLES,  
D3P\_FTG\_HAS\_BEAM\_VARIABLES,  
D3P\_FTG\_HAS\_SHELL\_VARIABLES
2. fix bug about the number of solid history variables(considering ALE variables).
3. support D3P\_NUM\_FREQUENCY and D3P\_FREQUENCIES for d3eigv file.
4. Add  
D3P\_ACS\_HAS\_\*\*\*  
D3P\_ATV\_HAS\_\*\*\*  
D3P\_EIGV\_AC\_HAS\_ACOUSTIC\_PRESSURE\_REAL  
D3P\_ERP\_HAS\_\*\*\*  
D3P\_ACP\_HAS\_\*\*\*  
D3P\_ACC\_HAS\_SHELL\_VARIABLES

## January 26, 2021 - Release 0.1.21

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1. Fix bug about D3P\_SHELL\_STATE\_DATA.
2. Add  
D3P\_NUM\_SOLID20  
D3P\_NUM\_SOLID27  
D3P\_SOLID20\_CONNECTIVITY\_EXTRA  
D3P\_SOLID27\_CONNECTIVITY\_EXTRA
3. Add INF\_NUM\_SEGMENT\_STATE and INF\_SEGMENT\_STATE\_DATA.
4. Fix bug about idmax.
5. Add D3P\_PART\_NAME\_STRUCT.
6. Fix bug about D3P\_GLOBAL\_TOTAL\_ENERGY\_HISTORY.
7. Add D3P\_NUM\_SOLID\_THERMAL\_STATE\_DATA and D3P\_SOLID\_THERMAL\_STATE\_DATA.
8. Fix bug about rigid wall

## January 7, 2021 - Release 0.1.20

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1. Support extracting nodal data by specifying the range(use idmin and idmax).
2. Add return code for D3P\_\*\*\*\_INTERNAL\_ID.

## January 4, 2021 - Release 0.1.19

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1. BinoutReader: support for directory name with one digit, such as d1, d2...
2. Fix bug about bndout branch of binout.

## December 26, 2020 - Release 0.1.18

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1. Support extracting data of road surface.
2. Support extracting data of nodal state data(like D3P\_NODE\_RESIDUAL\_FORCE).
3. Support extracting data of rigid body motion.
4. Fix bug about BinoutReader(like xxx.xxx.binout and xxx.xxx.d3ssd in the same directory).

## December 17, 2020 - Release 0.1.17

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1. Add return code.
2. Add the option to choose if the error message will be printed.

## December 14, 2020 - Release 0.1.16

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1. fix bug about elout branch of binout.

## December 2, 2020 - Release 0.1.15

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1. fix bug about rigid wall.

## November 30, 2020 - Release 0.1.14

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1. Add  
D3P\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_1  
D3P\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_2
2. Support interface force file.

## November 26, 2020 - Release 0.1.13

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1. Add  
D3P\_NUM\_SPH\_VARS,  
D3P\_EXTRA\_CONTROL,

D3P\_NUM\_HIGHER\_ORDER\_ELEMENT\_PART,  
D3P\_HIGHER\_ORDER\_ELEMENT\_PART\_VERSION,  
D3P\_HIGHER\_ORDER\_ELEMENT\_PART\_DATA,  
D3P\_NUM\_RIGID\_BODY\_SHELL\_ELEMENT,  
D3P\_NUM\_MATERIAL\_TYPE,  
D3P\_NUM\_\*\*\*\_STATE\_DATA(shell, solid, tshell, beam, sph),  
D3P\_\*\*\*\_STATE\_DATA(shell, solid, tshell, beam, sph).

2. Fix bug about rigid wall.

## **November 16, 2020 – Release 0.1.12:**

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1. Add D3P\_\*\*\*\_VON\_MISES\_STRESS(shell, tshell, solid, sph).
2. Add D3P\_CONTROL.

## **November 3, 2020 – Release 0.1.11:**

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1. Fix bug about shell strain.

## **October 14, 2020 – Release 0.1.10:**

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1. Fix bug about sph.
2. Support dbsensor branch for binout.

## **October 14, 2020 – Release 0.1.9:**

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1. Optimize the APIs of extracting DES data.

## **October 14, 2020 – Release 0.1.8:**

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1. Support these data type for Python:

D3P\_DES\_DATA\_IN\_STATE,  
D3P\_CPM\_GEOM\_DATA,  
D3P\_CPM\_STATE\_DATA,  
D3P\_CPM\_STATE\_GEOM\_DATA

## **October 9, 2020 – Release 0.1.7:**

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1. Fix bug about numpy array for BinoutReader.
2. Fix bug about extracting shell stress of special adaptive model.
3. Fix bug about D3P\_FREQUENCIES for Python.

## September 30, 2020 – Release 0.1.6:

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1. Fix bug about eloutdet branch of binout.
2. Add BINOUT\_JNTFORC\_ID\_STIFFNESS\_TRANSLATIONAL and BINOUT\_JNTFORC\_ID\_STIFFNESS\_GENERALIZED to support jntforc branch of binout for Python.
3. Remove message when using numpy for BinoutReader.
4. Update documents.

## September 24, 2020 – Release 0.1.5:

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1. Add:  
D3P\_HAS\_SOLID\_STRESS  
D3P\_HAS\_IDS
2. Support numpy for BinoutReader in Python.
3. Fix bug about trhist branch of BinoutReader.

## September 7, 2020 – Release 0.1.4:

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1. Support some more branches in binoutreader:  
dcfail  
dbfsi  
nodouthf  
prtube  
gceout  
defgeo  
dem\_rcforc  
brngout
2. Support extracting nodal data by part.
3. Support extracting element data by part set.
4. Support extracting nodal data by part set.

## August 12, 2020 – Release 0.1.3:

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1. Fix some bug about tprint branch of binoutreader.
2. Support extracting nodal data by part for d3plotreader.
3. Support very large binout file that expands into binout%001 binout%002, etc.

## July 30, 2020 – Release 0.1.2:

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1. Fix some bugs
2. Add extra parameter names:

D3P\_NUM\_SPH\_PART  
D3P\_NUM\_SHELL\_PART  
D3P\_NUM\_SOLID\_PART  
D3P\_NUM\_TSHELL\_PART  
D3P\_NUM\_BEAM\_PART

## July 27, 2020 – Release 0.1.1:

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1. Add:

D3P\_HAS\_NODE\_COORDINATES  
D3P\_HAS\_NODE\_VELOCITIES  
D3P\_HAS\_NODE\_ACCELERATIONS  
D3P\_HAS\_SOLID\_EFFECTIVE\_PLASTIC\_STRAIN  
D3P\_HAS\_SOLID\_HISTORY\_VAR  
D3P\_HAS\_TSHELL\_STRESS  
D3P\_HAS\_TSHELL\_EFFECTIVE\_PLASTIC\_STRAIN  
D3P\_HAS\_TSHELL\_HISTORY\_VAR  
D3P\_HAS\_SHELL\_STRESS  
D3P\_HAS\_SHELL\_EFFECTIVE\_PLASTIC\_STRAIN  
D3P\_HAS\_SHELL\_HISTORY\_VAR  
D3P\_HAS\_SHELL\_MX(MY, MXY, QX, QY, NX, NY, NXY)  
D3P\_HAS\_SHELL\_INTERNAL\_ENERGY\_DENSITY  
D3P\_HAS\_BEAM\_AXIAL\_STRESS  
D3P\_HAS\_BEAM\_RS\_SHEAR\_STRESS  
D3P\_HAS\_BEAM\_TR\_SHEAR\_STRESS  
D3P\_HAS\_BEAM\_AXIAL\_PLASTIC\_STRAIN  
D3P\_HAS\_BEAM\_AXIAL\_STRAIN  
D3P\_HAS\_BEAM\_HISTORY\_VAR  
D3P\_HAS\_SPH\_STRAIN\_RATE  
D3P\_HAS\_SPH\_STRAIN

## July 20, 2020 – Release 0.1.0:

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1. Add static libraries of LS-Reader.
2. Add macro LSREADER\_VERSION in d3plotreader.h and d3plotreader.h.
3. Support ipart\_user for *D3P\_PART\_XXX*.
4. Add version description about dynamic libraries of LS-Reader on Windows.
5. Support exception handling for C++.

## July 16, 2020 – Release 0.0.33:

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1. Support ALE data.
2. Add D3P\_HAS\_HEAT\_FLUX and D3P\_NUM\_TEMPERATURE.