# LS-Reader Tutorial

LS-Reader Tutorial 1

Python 4

Version Information 4

D3plotReader 5

API Functions (Recommended) 5

API Functions (Deprecated) 7

D3P\_Parameter 11

DataType 15

D3plot DataType 19

NVH DataType 52

Multi-Solver DataType 58

ALE DataType 62

Interface Force DataType 64

D3thdt DataType 67

How to use 69

Sample1.py 69

Sample2.py 71

Sample3.py 73

Sample4.py 74

BinoutReader 75

API Functions 75

BINOUT\_Parameter 77

DataType 78

How to use 248

Sample1.py 248

**Introduction**

This document describes the application functions interface of LS-Reader using Python.

The LS-Reader is designed to read LS-DYNA results and it supports C, C++ and Python languages. It supports both Windows(vs2010, vs2015, vs2017, vs2019) and Linux(GCC>=4.1.2). Because of the simplicity of the LS-Reader, using the libraries is very convenie

## Python

### Version Information

def **get\_version**():

pass

* Purpose: get version as a string
* Input: ignore
* Return: version as a string

### D3plotReader

#### API Functions (Recommended)

class **D3plotReader**():

    def **\_\_init\_\_**(self, path):

        pass

* Purpose: Constructor.
* Input: path: d3plot name.
* Return: D3plotReader object.

Example: dr = D3plotReader("d3plot/file/path")

def **get\_data**(self, type, param):

pass

* Purpose: Extract data.
* Input: type: type - enum the data variables' name in d3plot.

param: structure of description which is the advance setting for getting special data in d3plot.

* Return: data.

Example:

dr = D3plotReader("d3plot/file/path")

p = D3P\_Parameter()

p.ist = 11

p.ipt = 0

shell\_stress = dr.get\_data(DataType.D3P\_SHELL\_STRESS, p)

Or

dr = D3plotReader("d3plot/file/path")

shell\_stress = dr.get\_data(

     DataType.D3P\_SHELL\_STRESS, ist=11, ipt=0

)

def **close**(self):

        pass

* Purpose: close file manually. optional
* Input: ignore
* Return: ignore

def **set\_message\_level**(self, type):

        pass

* Purpose: set message type. The default message level is D3P\_MESSAGE\_OFF.
* Input: type – message type(D3P\_MessageType)
* Return: ignore

#### API Functions (Deprecated)

class **D3plotReader**():

    def **\_\_init\_\_**(self, path):

        pass

* Purpose: Constructor.
* Input: path: d3plot name.
* Return: D3plotReader object.

Example:dr = D3plotReader("d3plot/file/path")

def **GetDataInt**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get an integer value.
* Input: type - enum the data variables' name in d3plot.

Param - structure of description which is the advance setting for getting special data in d3plot.

* Return: int

def **GetDataFloat**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a float value.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: float.

def **GetDataString**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a string value.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: string.

def **GetDataIntArray**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a int array.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: int array.

def **GetDataFloatArray**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a float array.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: float array.

def **GetDataVectorArray**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a vector array.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: vector array.

def **GetDataTensorArray**(self, type, param):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get a tensor array.
* Input: type - enum the data variables' name in d3plot.

param - structure of description which is the advance setting for getting special data in d3plot.

* Return: tensor array.

def **GetDataSolidArray**(self):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get solid elements array.
* Return: solid elements array.

def **GetDataTshellArray**(self):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get tshell elements array.
* Return: tshell elements array.

def **GetDataBeamArray**(self):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get beam elements array.
* Return: beam elements array.

def **GetDataShellArray**(self):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get shell elements array.
* Return: shell elements array.

def **GetDataSphArray**(self):

pass

Deprecated. Use the get\_data(...) instead.

* Purpose: Get sph elements array.
* Return: sph elements array.

#### D3P\_Parameter

parameter to call D3plotReader::get\_data\*, only specific those member variables you are interested, otherwise, ignore this.

class D3P\_Parameter:

    def \_\_init\_\_(self):

        self.ist = -1

        self.ipt = -1

        self.ipart = -1

self.ipart\_user = -1

        self.i\_rigid\_wall = -1

        self.ides = -1

        self.ihv = -1

        self.index\_multisolver = -1

        self.id\_var\_multisolver = -1

self.iuser = -1

        self.var\_name = "”

self.ifieldpoint = -1

self.option = -1

self.ask\_for\_numpy\_array = false

self.ipartset\_user = []

1. **ist**: the state number, start from 0 and default is -1; the frequency number for frequency domain files.

shell\_thickness = dr.get\_data(DataType.D3P\_SHELL\_THICKNESS, ist=11)

**Or**

p = D3P\_Parameter()

p.ist = 11

shell\_thickness = dr.get\_data(DataType.D3P\_SHELL\_THICKNESS, p)

1. **ipt**: the integration point, range in [0, MAXINT), and default is -1

shell\_stress = dr.get\_data(DataType.D3P\_SHELL\_STRESS, ist=11, ipt=0)

**Or**

p = D3P\_Parameter()

p.ist = 11

p.ipt = 0

shell\_stress = dr.get\_data(DataType.D3P\_SHELL\_STRESS, p)

1. **ipart**: the index of part, start from 0 and default is -1

part\_name = dr.get\_data(DataType.D3P\_PART\_NAME, ipart=0)

**Or**

p = D3P\_Parameter()

p.ipart = 0

part\_name = dr.get\_data(DataType.D3P\_PART\_NAME, p)

1. **ipart\_user:** the user id of part

num\_shells = dr.get\_data(DataType.D3P\_NUM\_SHELL, ipart\_user=3)

1. **i\_rigid\_wall**: the index of rigid wall, start from 0 and default is -1

r\_wall\_f = dr.get\_data(

     DataType.D3P\_RIGID\_WALL\_FORCE, ist=11, i\_rigid\_wall=0

)

**Or**

p = D3P\_Parameter()

p.ist = 11

p.i\_rigid\_wall = 0

r\_wall\_f = dr.get\_data(DataType.D3P\_RIGID\_WALL\_FORCE, p)

1. **ides**: the index of the des data, start from 0 and default is -1

num\_des = dr.get\_data(DataType.D3P\_NUM\_DES\_PART\_IN\_GEOM, ides=0)

**Or**

p = D3P\_Parameter()

p.ides = 0

num\_des = dr.get\_data(DataType.D3P\_NUM\_DES\_PART\_IN\_GEOM, p)

1. **ihv**: the index of history variables, start from 0(sequence number)

solid\_hsvar = dr.get\_data(

     DataType.D3P\_SOLID\_HISTORY\_VAR, ist=11, ipt=0, ihv=5

)

**Or**

p = D3P\_Parameter()

p.ist = 11

p.ipt = 0

p.ihv = 5

solid\_hsvar = dr.get\_data(DataType.D3P\_SOLID\_HISTORY\_VAR, p)

1. **index\_multisolver**: the index of the multisolver domain, start from 0 and default is -1

ms\_id = dr.get\_data(DataType.D3P\_MS\_DOMAIN\_ID, index\_multisolver=0)

**Or**

p = D3P\_Parameter()

p.index\_multisolver = 0

ms\_id = dr.get\_data(DataType.D3P\_MS\_DOMAIN\_ID, p)

1. **id\_var\_multisolver**: the index of the multisolver var, start from 0 and default is -1

ms\_varn = dr.get\_data(DataType.D3P\_MS\_VAR\_NAME, id\_var\_multisolver=0)

**Or**

p = D3P\_Parameter()

p.id\_var\_multisolver = 0

ms\_varn = dr.get\_data(DataType.D3P\_MS\_VAR\_NAME, p)

1. **iuser:** the index of the user id, default is -1

internal\_id = dr.get\_data(DataType.D3P\_SHELL\_INTERNAL\_ID, iuser=354)

1. **ifieldpoint:** for d3atv and d3acc files, it is used to be the value of field point

**...**

1. **option:** the data option, currently used for frequency domain data, 0-defult, 1- amplitude, 2-phase angle

**...**

1. **id\_fluid\_group:** ale fulid group id, start from 1

**...**

1. **ask\_for\_numpy\_array:** Specify if returns ndarray(default is False)

stress = dr.get\_data(DataType.D3P\_SHELL\_STRESS, iuser=354, ask\_for\_numpy\_array=True)

1. **var\_name**: Specify name of output variables, currently used by DES and CPM data, default is empty

cpm\_geodt = dr.get\_data(DataType.D3P\_CPM\_GEOM\_DATA, var\_name='cpm1')

**Or**

p = D3P\_Parameter()

p.var\_name = 'cpm1'

cpm\_geodt = dr.get\_data(DataType.D3P\_CPM\_GEOM\_DATA, p)

1. **ipartset\_user**: part user id set

shell\_stress = dr.get\_data(DataType.D3P\_SHELL\_STRESS, ist=2, ipt=0, ipartset\_user=[1, 2])

#### DataType

enum D3P\_MessageType {

/\*\*

\* Do not print information

\*/

D3P\_MESSAGE\_OFF,

/\*\*

\* Print brief information

\*/

D3P\_MESSAGE\_DEBUG,

/\*\*

\* Print verbose information

\*/

D3P\_MESSAGE\_VERBOSE,

};

class D3P\_Vector():

    def x(self):

        pass

    def y(self):

        pass

    def z(self):

        pass

class D3P\_VectorDouble():

    def x(self):

        pass

    def y(self):

        pass

    def z(self):

        pass

class D3P\_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

class D3P\_Solid():

# return the value of nodal index(start from 0) plus one

    def node(self, index):

        pass

    def mat(self):

        pass

class D3P\_Tshell():

# return the value of nodal index(start from 0) plus one

    def node(self, index):

        pass

    def mat(self):

        pass

class D3P\_Beam():

# return the value of nodal index(start from 0) plus one

    def node(self, index):

        pass

    def mat(self):

        pass

class D3P\_Shell():

# return the value of nodal index(start from 0) plus one

    def node(self, index):

        pass

    def mat(self):

        pass

class D3P\_Sph():

    def id(self):

        pass

    def mat(self):

        pass

class D3P\_Var():

# 1: integer; 2: float

    def type(self):

        pass

    def name(self):

        pass

class D3P\_Des():

    def id(self):

        pass

    def mat(self):

        pass

    def radius(self):

        pass

    def mass(self):

        pass

    def inertia(self):

        pass

##### D3plot DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| D3P\_CODE\_RELEASE | char[] | 80 | ignore |
| D3P\_TITLE | char[] | 80 | ignore |
| D3P\_HAS\_D3PLOT | bool | 1 | ignore |
| D3P\_HAS\_GLOBAL\_KINETIC\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_GLOBAL\_INTERNAL\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_GLOBAL\_TOTAL\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_GLOBAL\_VELOCITY | bool | 1 | ignore |
| D3P\_HAS\_PART\_TITLE | bool | 1 | ignore |
| D3P\_HAS\_PART\_IDS | bool | 1 | ignore, ist if adaptive |
| D3P\_HAS\_PART\_NAME | bool | 1 | ignore |
| D3P\_HAS\_PART\_NAME\_STRUCT | bool | 1 | ignore |
| D3P\_HAS\_PART\_INTERNAL\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_PART\_KINETIC\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_PART\_VELOCITY | bool | 1 | ignore |
| D3P\_HAS\_PART\_MASS | bool | 1 | ignore |
| D3P\_HAS\_PART\_HOURGLASS | bool | 1 | ignore |
| D3P\_HAS\_RIGID\_WALL\_FORCE | bool | 1 | ignore |
| D3P\_HAS\_RIGID\_WALL\_POSITION | bool | 1 | ignore |
| D3P\_IS\_ADAPTIVE | bool | 1 | ignore |
| D3P\_HAS\_IDS | bool | 1 | ignore |
| D3P\_HAS\_THERMAL\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_TEMPERATURE | bool | 1 | ignore |
| D3P\_NUM\_TEMPERATURE | int | 1 | ignore |
| D3P\_HAS\_HEAT\_FLUX | bool | 1 | ignore |
| D3P\_HAS\_NODE\_IDS | bool | 1 | ignore |
| D3P\_HAS\_NODE\_COORDINATES | bool | 1 | ignore |
| D3P\_HAS\_NODE\_VELOCITIES | bool | 1 | ignore |
| D3P\_HAS\_NODE\_ACCELERATIONS | bool | 1 | ignore |
| D3P\_HAS\_NODE\_MASS\_SCALING | bool | 1 | ignore |
| D3P\_HAS\_NODE\_TEMPERATURE\_DIVIDE\_TIME | bool | 1 | ignore |
| D3P\_HAS\_NODE\_RESIDUAL\_FORCE | bool | 1 | ignore |
| D3P\_HAS\_NODE\_RESIDUAL\_MOMENT | bool | 1 | ignore |
| D3P\_HAS\_NODE\_PENETRATION | bool | 1 | ignore |
| D3P\_HAS\_NODE\_RELATIVE\_PENETRATION | bool | 1 | ignore |
| D3P\_HAS\_NODE\_CONTACT\_ENERGY\_DENSITY | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_IDS | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_STRESS | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_VON\_MISES\_STRESS | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_EFFECTIVE\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_THERMAL\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SOLID\_HISTORY\_VAR | bool | 1 | ignore |
| D3P\_HAS\_TSHELL\_IDS | bool | 1 | ignore |
| D3P\_HAS\_TSHELL\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_TSHELL\_VON\_MISES\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_TSHELL\_EFFECTIVE\_PLASTIC\_STRAIN | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_TSHELL\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_TSHELL\_HISTORY\_VAR | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_IDS | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_VON\_MISES\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_EFFECTIVE\_PLASTIC\_STRAIN | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_THERMAL\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_THICKNESS | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_1 | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_2 | bool | 1 | ignore |
| D3P\_HAS\_SHELL\_HISTORY\_VAR | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_MX | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_MY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_MXY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_QX | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_QY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_NX | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_NY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_NXY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_SHELL\_INTERNAL\_ENERGY\_DENSITY | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_IDS | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_AXIAL\_FORCE | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_S\_SHEAR\_RESULTANT | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_T\_SHEAR\_RESULTANT | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_S\_BENDING\_MOMENT | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_T\_BENDING\_MOMENT | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_TORSIONAL\_RESULTANT | bool | 1 | ignore |
| D3P\_HAS\_BEAM\_AXIAL\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_RS\_SHEAR\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_TR\_SHEAR\_STRESS | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_AXIAL\_PLASTIC\_STRAIN | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_AXIAL\_STRAIN | bool | 1 | ignore, ist if adaptive model |
| D3P\_HAS\_BEAM\_HISTORY\_VAR | bool | 1 | ignore |
| D3P\_HAS\_SPH\_RAIDUS | bool | 1 | ignore |
| D3P\_HAS\_SPH\_PRESSURE | bool | 1 | ignore |
| D3P\_HAS\_SPH\_STRESS | bool | 1 | ignore |
| D3P\_HAS\_SPH\_VON\_MISES\_STRESS | bool | 1 | ignore |
| D3P\_HAS\_SPH\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SPH\_DENSITY | bool | 1 | ignore |
| D3P\_HAS\_SPH\_INTERNAL\_ENERGY | bool | 1 | ignore |
| D3P\_HAS\_SPH\_STRAIN\_RATE | bool | 1 | ignore |
| D3P\_HAS\_SPH\_STRAIN | bool | 1 | ignore |
| D3P\_HAS\_SPH\_MASS | bool | 1 | ignore |
| D3P\_IS\_SHELL | bool | 1 | ipart\_user or ipart |
| D3P\_IS\_SOLID | bool | 1 | ipart\_user or ipart |
| D3P\_IS\_TSHELL | bool | 1 | ipart\_user or ipart |
| D3P\_IS\_BEAM | bool | 1 | ipart\_user or ipart |
| D3P\_IS\_SPH | bool | 1 | ipart\_user or ipart |
| D3P\_NUM\_STATES | int | 1 | ignore |
| D3P\_TIMES | float | D3P\_NUM\_STATES | ignore |
| D3P\_NEW\_GEOM | int | 1 | ist |
| D3P\_NEW\_GEOM\_STATE | int | 1 | ist |
| D3P\_GLOBAL\_KINETIC\_ENERGY | float | 1 | ist |
| D3P\_GLOBAL\_INTERNAL\_ENERGY | float | 1 | ist |
| D3P\_GLOBAL\_TOTAL\_ENERGY | float | 1 | ist |
| D3P\_GLOBAL\_VELOCITY | D3P\_Vector | 1 | ist |
| D3P\_NUM\_PARTS | int | 1 | ignore |
| D3P\_PART\_IDS | int | D3P\_NUM\_PARTS | ignore |
| D3P\_PART\_NAME | char | 80 | ipart\_user or ipart |
| D3P\_PART\_INTERNAL\_ENERGY | float | 1 | ist, ipart\_user or ipart |
| D3P\_PART\_KINETIC\_ENERGY | float | 1 | ist, ipart\_user or ipart |
| D3P\_PART\_VELOCITY | D3P\_Vector | 1 | ist, ipart\_user or ipart |
| D3P\_PART\_MASS | float | 1 | ist, ipart\_user or ipart |
| D3P\_PART\_HOURGLASS | float | 1 | ist, ipart\_user or ipart |
| D3P\_PART\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_NUM\_RIGID\_WALL | int | 1 | ignore |
| D3P\_RIGID\_WALL\_FORCE | float | 1 | ist, i\_rigid\_wall |
| D3P\_RIGID\_WALL\_POSITION | D3P\_Vector | 1 | ist, i\_rigid\_wall |
| D3P\_NUM\_NODES | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_INITIAL\_COORDINATES | D3P\_Vector | D3P\_NUM\_NODES | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_IDS | int | D3P\_NUM\_NODES | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_TEMPERATURE | float | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set, ipt if necessary  shell node:  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer  solid node: ignore |
| D3P\_NODE\_TEMPERATURE\_DOUBLE | double | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set, ipt if necessary  shell node:  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer  solid node: ignore |
| D3P\_NODE\_HEAT\_FLUX | D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_MASS\_SCALING | float | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_TEMPERATURE\_DIVIDE\_TIME | float | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_RESIDUAL\_FORCE | \_D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_RESIDUAL\_MOMENT | \_D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_PENETRATION | \_D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_RELATIVE\_PENETRATION | \_D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_CONTACT\_ENERGY\_DENSITY | float | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_COORDINATES | D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_VELOCITIES | D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_ACCELERATIONS | D3P\_Vector | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_COORDINATES\_DOUBLE | D3P\_VectorDouble | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_VELOCITIES\_DOUBLE | D3P\_VectorDouble | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_ACCELERATIONS\_DOUBLE | D3P\_VectorDouble | D3P\_NUM\_NODES | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NODE\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_NUM\_SOLID | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_SOLID\_PART | int | 1 | ignore |
| D3P\_SOLID\_CONNECTIVITY\_MAT | D3P\_Solid | D3P\_NUM\_SOLID | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_IDS | int | D3P\_NUM\_SOLID | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_STRESS | D3P\_Tensor | D3P\_NUM\_SOLID | ist, ipt if necessary, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_VON\_MISES\_STRESS | float | D3P\_NUM\_SOLID | ist, ipt if necessary, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_EFFECTIVE\_PLASTIC\_STRAIN | float | D3P\_NUM\_SOLID | ist, ipt if necessary, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_STRAIN | D3P\_Tensor | D3P\_NUM\_SOLID | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_PLASTIC\_STRAIN | D3P\_Tensor | D3P\_NUM\_SOLID | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_THERMAL\_STRAIN | D3P\_Tensor | D3P\_NUM\_SOLID | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_HISTORY\_VAR | float | D3P\_NUM\_SOLID | ist, ipt if necessary, ihv, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SOLID\_MAXINT | int | 1 | ignore |
| D3P\_SOLID\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_SOLID\_HISTORY\_VAR\_NUM | int | 1 | ignore |
| D3P\_SOLID\_ELEMENT\_CENTROID | D3P\_Vector | D3P\_NUM\_SOLID | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_TSHELL | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_TSHELL\_PART | int | 1 | ignore |
| D3P\_TSHELL\_CONNECTIVITY\_MAT | D3P\_Tshell | D3P\_NUM\_TSHELL | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_IDS | int | D3P\_NUM\_TSHELL | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_STRESS | D3P\_Tensor | D3P\_NUM\_TSHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_VON\_MISES\_STRESS | float | D3P\_NUM\_TSHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_EFFECTIVE\_PLASTIC\_STRAIN | float | D3P\_NUM\_TSHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_STRAIN | D3P\_Tensor | D3P\_NUM\_TSHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set  ipt = 0: middle  ipt = 1: inner  ipt = 2: outer |
| D3P\_TSHELL\_HISTORY\_VAR | float | D3P\_NUM\_TSHELL | ist, ipt, ihv, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_MAXINT | int | 1 | ignore |
| D3P\_TSHELL\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_TSHELL\_HISTORY\_VAR\_NUM | int | 1 | ignore |
| D3P\_TSHELL\_ELEMENT\_CENTROID | D3P\_Vector | D3P\_NUM\_TSHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_BEAM | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_BEAM\_PART | int | 1 | ignore |
| D3P\_BEAM\_CONNECTIVITY\_THIRD\_MAT | D3P\_Beam | D3P\_NUM\_BEAM | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_IDS | int | D3P\_NUM\_BEAM | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_AXIAL\_FORCE | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_S\_SHEAR\_RESULTANT | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_T\_SHEAR\_RESULTANT | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_S\_BENDING\_MOMENT | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_T\_BENDING\_MOMENT | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_TORSIONAL\_RESULTANT | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_AXIAL\_STRESS | float | D3P\_NUM\_BEAM | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_RS\_SHEAR\_STRESS | float | D3P\_NUM\_BEAM | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_TR\_SHEAR\_STRESS | float | D3P\_NUM\_BEAM | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_AXIAL\_PLASTIC\_STRAIN | float | D3P\_NUM\_BEAM | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_AXIAL\_STRAIN | float | D3P\_NUM\_BEAM | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_HISTORY\_VAR | float | D3P\_NUM\_BEAM | ist, ipt, ihv, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_MAXINT | int | 1 | ignore |
| D3P\_BEAM\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_BEAM\_HISTORY\_VAR\_NUM | int | 1 | ignore |
| D3P\_BEAM\_ELEMENT\_CENTROID | D3P\_Vector | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_SHELL | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_SHELL\_PART | int | 1 | ignore |
| D3P\_SHELL\_CONNECTIVITY\_MAT | D3P\_Shell | D3P\_NUM\_SHELL | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_IDS | int | D3P\_NUM\_SHELL | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_STRESS | D3P\_Tensor | D3P\_NUM\_SHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_VON\_MISES\_STRESS | float | D3P\_NUM\_SHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_EFFECTIVE\_PLASTIC\_STRAIN | float | D3P\_NUM\_SHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_STRAIN | D3P\_Tensor | D3P\_NUM\_SHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set  ipt = 0: middle  ipt = 1: inner  ipt = 2: outer |
| D3P\_SHELL\_PLASTIC\_STRAIN | D3P\_Tensor | D3P\_NUM\_SHELL | ist, ipt, ipart or ipart\_user if by part, ipartset\_user if by part set  ipt = 0: middle  ipt = 1: inner  ipt = 2: outer |
| D3P\_SHELL\_THERMAL\_STRAIN | D3P\_Tensor | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_THICKNESS | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_1 | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_ELEMENT\_DEPENDENT\_VAR\_2 | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_HISTORY\_VAR | float | D3P\_NUM\_SHELL | ist, ipt, ihv, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_MAXINT | int | 1 | ignore |
| D3P\_SHELL\_MX | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_MY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_MXY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_QX | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_QY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_NX | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_NY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_NXY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_INTERNAL\_ENERGY\_DENSITY | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_SHELL\_HISTORY\_VAR\_NUM | int | 1 | ignore |
| D3P\_SHELL\_ELEMENT\_CENTROID | D3P\_Vector | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_HAS\_DELETION | bool | 1 | ist |
| D3P\_ALL\_DELETION | float | D3P\_NUM\_SOLID + D3P\_NUM\_TSHELL + D3P\_NUM\_SHELL + D3P\_NUM\_BEAM | ist |
| D3P\_SOLID\_DELETION | float | D3P\_NUM\_SOLID | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_TSHELL\_DELETION | float | D3P\_NUM\_TSHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SHELL\_DELETION | float | D3P\_NUM\_SHELL | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_BEAM\_DELETION | float | D3P\_NUM\_BEAM | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_SPH | int | 1 | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_NUM\_SPH\_PART | int | 1 | ignore |
| D3P\_SPH\_NODE\_MAT | D3P\_Sph | D3P\_NUM\_SPH | ignore, ist if adaptive model, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_RADIUS | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_PRESSURE | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_STRESS | D3P\_Tensor | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_PLASTIC\_STRAIN | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_DENSITY | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_INTERNAL\_ENERGY | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_NUMBER\_OF\_PARTICLE\_NEIGHBORS | int | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_STRAIN | D3P\_Tensor | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_STRAIN\_RATE | D3P\_Tensor | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_MASS | float | D3P\_NUM\_SPH | ist, ipart or ipart\_user if by part, ipartset\_user if by part set |
| D3P\_SPH\_INTERNAL\_ID | int | 1 | iuser |
| D3P\_HAS\_DES\_DATA | bool | 1 | ignore |
| D3P\_NUM\_DES\_DATA | int | 1 | ignore |
| D3P\_NUM\_DES\_PART\_IN\_GEOM | int | 1 | ides if necessary |
| D3P\_NUM\_DES\_ELEM\_IN\_GEOM | int | 1 | ides if necessary |
| D3P\_NUM\_DES\_PART\_IN\_STATE | int | 1 | ides if necessary |
| D3P\_NUM\_DES\_ELEM\_IN\_STATE | int | 1 | ides if necessary |
| D3P\_NUM\_DES\_PART\_VAR\_IN\_GEOM | int | 1 | ides if necessary |
| D3P\_DES\_PART\_VAR\_LIST\_IN\_GEOM | D3P\_VAR | D3P\_NUM\_DES\_PART\_VAR\_IN\_GEOM | ides if necessary |
| D3P\_NUM\_DES\_ELEM\_VAR\_IN\_GEOM | int | 1 | ides if necessary |
| D3P\_DES\_ELEM\_VAR\_LIST\_IN\_GEOM | D3P\_VAR | D3P\_NUM\_DES\_ELEM\_VAR\_IN\_GEOM | ides if necessary |
| D3P\_NUM\_DES\_PART\_VAR\_IN\_STATE | int | 1 | ides if necessary |
| D3P\_DES\_PART\_VAR\_LIST\_IN\_STATE | D3P\_VAR | D3P\_NUM\_DES\_PART\_VAR\_IN\_STATE | ides if necessary |
| D3P\_NUM\_DES\_ELEM\_VAR\_IN\_STATE | int | 1 | ides if necessary |
| D3P\_DES\_ELEM\_VAR\_LIST\_IN\_STATE | D3P\_VAR | D3P\_NUM\_DES\_ELEM\_VAR\_IN\_STATE | ides if necessary |
| D3P\_DES\_NODAL\_MAT\_RADIUS\_MASS\_INERTIA | D3P\_DES | D3P\_NUM\_DES\_ELEM\_IN\_GEOM | ides if necessary |
| D3P\_DES\_DATA\_IN\_STATE | int/float..depends | D3P\_NUM\_DES\_ELEM\_IN\_STATE | var\_name, ist, ides if necessary |
| D3P\_HAS\_CPM\_DATA | bool | 1 | ignore |
| D3P\_CPM\_NUM\_AIRBAGS | int | 1 | ignore |
| D3P\_CPM\_NUM\_PARTICLES | int | 1 | ignore |
| D3P\_CPM\_NUM\_GEOM\_VAR | int | 1 | ignore |
| D3P\_CPM\_GEOM\_VAR\_LIST | D3P\_VAR | D3P\_CPM\_NUM\_GEOM\_VAR | ignore |
| D3P\_CPM\_GEOM\_DATA | int/float...depends | D3P\_CPM\_NUM\_AIRBAGS | var\_name |
| D3P\_CPM\_NUM\_STATE\_VAR | int | 1 | ignore |
| D3P\_CPM\_STATE\_VAR\_LIST | D3P\_VAR | D3P\_CPM\_NUM\_STATE\_VAR | ignore |
| D3P\_CPM\_STATE\_DATA | int/float...depends | D3P\_CPM\_NUM\_PARTICLES | var\_name, ist |
| D3P\_CPM\_NUM\_STATE\_GEOM\_VAR | int | 1 | ignore |
| D3P\_CPM\_STATE\_GEOM\_VAR\_LIST | D3P\_VAR | D3P\_CPM\_NUM\_STATE\_GEOM\_VAR | ignore |
| D3P\_CPM\_STATE\_GEOM\_DATA | int/float...depends | D3P\_CPM\_NUM\_AIRBAGS | var\_name, ist |
| D3P\_GLOBAL\_KINETIC\_ENERGY\_HISTORY | float | D3P\_NUM\_STATES | ignore |
| D3P\_GLOBAL\_INTERNAL\_ENERGY\_HISTORY | float | D3P\_NUM\_STATES | ignore |
| D3P\_GLOBAL\_TOTAL\_ENERGY\_HISTORY | float | D3P\_NUM\_STATES | ignore |
| D3P\_GLOBAL\_VELOCITY\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | ignore |
| D3P\_NODE\_TEMPERATURE\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt if necessary  shell node:  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer  solid node: ignore ipt |
| D3P\_SOLID\_EFFECTIVE\_PLASTIC\_STRAIN\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt if necessary |
| D3P\_SOLID\_HISTORY\_VAR\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt if necessary, ihv |
| D3P\_TSHELL\_EFFECTIVE\_PLASTIC\_STRAIN\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_TSHELL\_HISTORY\_VAR\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt, ihv |
| D3P\_BEAM\_AXIAL\_FORCE\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_S\_SHEAR\_RESULTANT\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_T\_SHEAR\_RESULTANT\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_S\_BENDING\_MOMENT\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_T\_BENDING\_MOMENT\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_TORSIONAL\_RESULTANT\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_AXIAL\_STRESS\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_BEAM\_RS\_SHEAR\_STRESS\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_BEAM\_TR\_SHEAR\_STRESS\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_BEAM\_AXIAL\_PLASTIC\_STRAIN\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_BEAM\_AXIAL\_STRAIN\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_BEAM\_HISTORY\_VAR\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt, ihv |
| D3P\_SHELL\_EFFECTIVE\_PLASTIC\_STRAIN\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_SHELL\_THICKNESS\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_HISTORY\_VAR\_HISTORY | float | D3P\_NUM\_STATES | iuser, ipt, ihv |
| D3P\_SHELL\_MX\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_MY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_MXY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_QX\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_QY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_NX\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_NY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_NXY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_INTERNAL\_ENERGY\_DENSITY\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SOLID\_DELETION\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_TSHELL\_DELETION\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_DELETION\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_DELETION\_HISTORY | float | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_HEAT\_FLUX\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_COORDINATES\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_COORDINATES\_DOUBLE\_HISTORY | D3P\_VectorDouble | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_VELOCITIES\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_ACCELERATIONS\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_SOLID\_ELEMENT\_CENTROID\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_TSHELL\_ELEMENT\_CENTROID\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_BEAM\_ELEMENT\_CENTROID\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_SHELL\_ELEMENT\_CENTROID\_HISTORY | D3P\_Vector | D3P\_NUM\_STATES | iuser |
| D3P\_SOLID\_STRESS\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt if necessary |
| D3P\_SOLID\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt if necessary |
| D3P\_SOLID\_PLASTIC\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_SOLID\_THERMAL\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_TSHELL\_STRESS\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_TSHELL\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer |
| D3P\_SHELL\_STRESS\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt |
| D3P\_SHELL\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer |
| D3P\_SHELL\_PLASTIC\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser, ipt  ipt = 0, middle  ipt = 1, inner  ipt = 2, outer |
| D3P\_SHELL\_THERMAL\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_SPH\_STRESS\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_SPH\_STRAIN\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_SPH\_STRAIN\_RATE\_HISTORY | D3P\_Tensor | D3P\_NUM\_STATES | iuser |
| D3P\_NODE\_ID\_COORDINATES | ndarray | (D3P\_NUM\_NODES, 4) | ist |
| D3P\_SHELL\_ID\_CONNECTIVITY\_MAT | ndarray | (D3P\_NUM\_SHELL, 6) | ignore, ist if adaptive model |
| D3P\_SOLID\_ID\_CONNECTIVITY\_MAT | ndarray | (D3P\_NUM\_SOLID, 10) | ignore, ist if adaptive model |
| D3P\_TSHELL\_ID\_CONNECTIVITY\_MAT | ndarray | (D3P\_NUM\_TSHELL, 10) | ignore, ist if adaptive model |
| D3P\_BEAM\_ID\_CONNECTIVITY\_MAT | ndarray | (D3P\_NUM\_BEAM, 4) | ignore, ist if adaptive model |

##### NVH DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| D3P\_HAS\_FREQUENCY | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_NODE\_DISPLACEMENTS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_NODE\_VELOCITIES | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_NODE\_ACCELERATIONS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SOLID\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SOLID\_VON\_MISES\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SOLID\_STRAIN | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_TSHELL\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_TSHELL\_VON\_MISES\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_TSHELL\_STRAIN | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_AXIAL\_FORCE | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_S\_SHEAR\_RESULTANT | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_T\_SHEAR\_RESULTANT | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_S\_BENDING\_MOMENT | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_T\_BENDING\_MOMENT | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_TORSIONAL\_RESULTANT | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_AXIAL\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_RS\_SHEAR\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_TR\_SHEAR\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_AXIAL\_PLASTIC\_STRAIN | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_BEAM\_AXIAL\_STRAIN | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SHELL\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SHELL\_VON\_MISES\_STRESS | bool | 1 | ignore |
| D3P\_FREQUENCY\_HAS\_SHELL\_STRAIN | bool | 1 | ignore |
|  |  |  |  |
| D3P\_HAS\_FTG | bool | 1 | ignore |
| D3P\_FTG\_HAS\_SOLID\_VARIABLES | bool | 1 | ignore |
| D3P\_FTG\_HAS\_TSHELL\_VARIABLES | bool | 1 | ignore |
| D3P\_FTG\_HAS\_BEAM\_VARIABLES | bool | 1 | ignore |
| D3P\_FTG\_HAS\_SHELL\_VARIABLES | bool | 1 | ignore |
| D3P\_HAS\_ACS | bool | 1 | ignore |
| D3P\_ACS\_HAS\_ACOUSTIC\_PRESSURE\_REAL | bool | 1 | ignore |
| D3P\_ACS\_HAS\_ACOUSTIC\_PRESSURE\_IMAGINARY | bool | 1 | ignore |
| D3P\_ACS\_HAS\_ACOUSTIC\_INTENSITY | bool | 1 | ignore |
| D3P\_ACS\_HAS\_SOUND\_PRESSURE\_LEVEL\_dB | bool | 1 | ignore |
| D3P\_ACS\_HAS\_NORMAL\_VELOCITY\_REAL | bool | 1 | ignore |
| D3P\_ACS\_HAS\_NORMAL\_VELOCITY\_IMAGINARY | bool | 1 | ignore |
| D3P\_HAS\_ATV | bool | 1 | ignore |
| D3P\_ATV\_HAS\_ACOUSTIC\_PRESSURE\_REAL | bool | 1 | ignore |
| D3P\_ATV\_HAS\_ACOUSTIC\_PRESSURE\_IMAGINARY | bool | 1 | ignore |
| D3P\_ATV\_HAS\_SOUND\_PRESSURE\_LEVEL\_dB | bool | 1 | ignore |
| D3P\_HAS\_EIGV | bool | 1 | ignore |
| D3P\_EIGV\_HAS\_NODE\_COORDINATES | bool | 1 | ignore |
| D3P\_EIGV\_HAS\_NODE\_VELOCITIES | bool | 1 | ignore |
| D3P\_EIGV\_HAS\_NODE\_ACCELERATIONS | bool | 1 | ignore |
| D3P\_HAS\_EIGV\_AC | bool | 1 | ignore |
| D3P\_EIGV\_AC\_HAS\_ACOUSTIC\_PRESSURE\_REAL | bool | 1 | ignore |
| D3P\_HAS\_ERP | bool | 1 | ignore |
| D3P\_ERP\_HAS\_NORMAL\_VELOCITY\_REAL | bool | 1 | ignore |
| D3P\_ERP\_HAS\_NORMAL\_VELOCITY\_IMAGINARY | bool | 1 | ignore |
| D3P\_ERP\_HAS\_NORMAL\_VELOCITY\_ABSOLUTE | bool | 1 | ignore |
| D3P\_ERP\_HAS\_ACOUSTIC\_INTENSITY | bool | 1 | ignore |
| D3P\_ERP\_HAS\_ACOUSTIC\_ERP\_DENSITY | bool | 1 | ignore |
| D3P\_HAS\_ACP | bool | 1 | ignore |
| D3P\_ACP\_HAS\_ACOUSTIC\_PRESSURE\_REAL | bool | 1 | ignore |
| D3P\_ACP\_HAS\_ACOUSTIC\_PRESSURE\_IMAGINARY | bool | 1 | ignore |
| D3P\_ACP\_HAS\_ACOUSTIC\_INTENSITY | bool | 1 | ignore |
| D3P\_ACP\_HAS\_SOUND\_PRESSURE\_LEVEL\_dB | bool | 1 | ignore |
| D3P\_HAS\_ACC | bool | 1 | ignore |
| D3P\_ACC\_HAS\_FIELD\_POINT | bool | 1 | ignore |
| D3P\_ACC\_HAS\_SHELL\_VARIABLES | bool | 1 | ignore |
|  |  |  |  |

##### Multi-Solver DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| D3P\_HAS\_MS\_DATA | bool | 1 | ignore |
| D3P\_MS\_DOMAIN\_HAS\_PART\_MAT | bool | 1 | ignore |
| D3P\_MS\_DOMAIN\_HAS\_PART\_IDS | bool | 1 | ignore |
| D3P\_MS\_DOMAIN\_HAS\_NODE\_IDS | bool | 1 | ignore |
| D3P\_MS\_DOMAIN\_HAS\_ELEM\_IDS | bool | 1 | ignore |
| D3P\_MS\_NUM\_DOMAINS | int | 1 | ignore |
| D3P\_MS\_DOMAIN\_ID | int | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_NAME | char | 80 | index\_multisolver |
| D3P\_MS\_DOMAIN\_IS\_FOLLOW\_SURFACE\_METHOD | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_IS\_SOLID | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_IS\_SHELL | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_IS\_BEAM | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_NUM\_PART | int | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_PART\_MAT | int | D3P\_MS\_DOMAIN\_NUM\_PART | index\_multisolver |
| D3P\_MS\_DOMAIN\_PART\_IDS | int | D3P\_MS\_DOMAIN\_PART\_NUM | index\_multisolver |
| D3P\_MS\_DOMAIN\_IS\_ADAPTIVE | bool | 1 | ignore |
| D3P\_MS\_DOMAIN\_NUM\_NODE | int | 1 | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_NODE\_IDS | int | D3P\_MS\_DOMAIN\_NODE\_NUM\_IN\_STATE | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_NUM\_NODE\_ON\_SURFACE | int | 1 | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_NODE\_IDS\_ON\_SURFACE | int | 1 | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_NODE\_COORDINATES | D3P\_Vector | D3P\_MS\_DOMAIN\_NUM\_NODE | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_NUM\_ELEM | int | 1 | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_ELEM\_IDS | int | D3P\_MS\_DOMAIN\_NUM\_ELEM | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_DATA\_IS\_ON\_STRUCTURE\_ELEMENT | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_DATA\_IS\_ON\_MS\_NODE | bool | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_DATA\_IS\_ON\_MS\_ELEMENT | bool | 1 | index\_multisolver |
| D3P\_MS\_SOLID\_CONNECTIVITY\_MAT | D3P\_Solid | D3P\_MS\_DOMAIN\_NUM\_ELEM | index\_multisolver, ist if adaptive model |
| D3P\_MS\_SHELL\_CONNECTIVITY\_MAT | D3P\_Shell | D3P\_MS\_DOMAIN\_NUM\_ELEM | index\_multisolver, ist if adaptive model |
| D3P\_MS\_BEAM\_CONNECTIVITY\_MAT | D3P\_Beam | D3P\_MS\_DOMAIN\_NUM\_ELEM | index\_multisolver, ist if adaptive model |
| D3P\_MS\_DOMAIN\_VAR\_NUM | int | 1 | index\_multisolver |
| D3P\_MS\_DOMAIN\_VARS\_LIST | int | D3P\_MS\_DOMAIN\_VAR\_NUM | index\_multisolver |
| D3P\_MS\_VAR\_NAME | char | 80 | id\_var\_multisolver |
| D3P\_MS\_VAR\_IS\_VECTOR | bool | 1 | id\_var\_multisolver |
| D3P\_MS\_VAR\_IS\_SCALAR | bool | 1 | id\_var\_multisolver |
| D3P\_MS\_VAR\_IS\_TENSOR | bool | 1 | id\_var\_multisolver |
| D3P\_MS\_DOMAIN\_VAR\_LENGTH | int | 1 | ist, index\_multisolver |
| D3P\_MS\_DOMAIN\_DATA\_IN\_STATE | float or D3P\_Vector or D3P\_Tensor | D3P\_MS\_DOMAIN\_VAR\_LENGTH | index\_multisolver, ist, id\_var\_multisolver |

##### ALE DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| D3P\_HAS\_ALE | bool | 1 | ignore |
| D3P\_ALE\_HAS\_MATERIAL\_IDS | bool | 1 | ignore |
| D3P\_ALE\_HAS\_DENSITY | bool | 1 | ignore |
| D3P\_ALE\_HAS\_VOLUME\_FRACTION | bool | 1 | ignore |
| D3P\_ALE\_HAS\_DOMINANT\_MATERIAL | bool | 1 | ignore |
| D3P\_ALE\_HAS\_SPECIES\_MASS | bool | 1 | ignore |
| D3P\_ALE\_NUM\_FLUID\_GROUP | int | 1 | ignore |
| D3P\_ALE\_NUM\_FLUID\_PART | int | 1 | ignore |
| D3P\_ALE\_MATERIAL\_IDS | int | D3P\_ALE\_NUM\_FLUID\_PART | ignore |
| D3P\_ALE\_DENSITY | float | D3P\_NUM\_SOLID | ist |
| D3P\_ALE\_VOLUME\_FRACTION | float | D3P\_NUM\_SOLID | ist, id\_fluid\_group (from 1 to D3P\_ALE\_NUM\_FLUID\_GROUP) |
| D3P\_ALE\_DOMINANT\_MATERIAL | float | D3P\_NUM\_SOLID | ist |
| D3P\_ALE\_SPECIES\_MASS | float | D3P\_NUM\_SOLID | ist, id\_fluid\_group (from 1 to D3P\_ALE\_NUM\_FLUID\_GROUP) |

##### Interface Force DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| INF\_NUM\_STATES | int | 1 | ignore |
| INF\_TIMES | float | INF\_NUM\_STATES | ignore |
| INF\_NUM\_NODES | int | 1 | ignore, ist if adaptive model |
| INF\_NODE\_INITIAL\_COORDINATES | \_D3P\_Vector | INF\_NUM\_NODES | ignore, ist if adaptive model |
| INF\_NODE\_IDS | int | INF\_NUM\_NODES | ignore, ist if adaptive model |
| INF\_NODE\_COORDINATES | \_D3P\_Vector | INF\_NUM\_NODES | ist |
| INF\_NODE\_VELOCITIES | \_D3P\_Vector | INF\_NUM\_NODES | ist |
| INF\_NODE\_ACCELERATIONS | \_D3P\_Vector | INF\_NUM\_NODES | ist |
| INF\_NODE\_COORDINATES\_DOUBLE | \_D3P\_VectorDouble | INF\_NUM\_NODES | ist |
| INF\_NODE\_VELOCITIES\_DOUBLE | \_D3P\_VectorDouble | INF\_NUM\_NODES | ist |
| INF\_NODE\_ACCELERATIONS\_DOUBLE | \_D3P\_VectorDouble | INF\_NUM\_NODES | ist |
| INF\_NUM\_SEGMENTS | int | 1 | ignore, ist if adaptive model |
| INF\_SEGMENT\_CONNECTIVITY\_MAT | \_D3P\_Shell | INF\_NUM\_SEGMENTS | ignore, ist if adaptive model |
| INF\_SEGMENT\_IDS | int | INF\_NUM\_SEGMENTS | ignore, ist if adaptive model |
| INF\_INTERFACE\_PRESSURE | float | INF\_NUM\_SEGMENTS | ist |
| INF\_INTERFACE\_SHEAR\_STRESS | float | INF\_NUM\_SEGMENTS | ist |
| INF\_R\_INTERFACE\_SHEAR\_STRESS | float | INF\_NUM\_SEGMENTS | ist |
| INF\_S\_INTERFACE\_SHEAR\_STRESS | float | INF\_NUM\_SEGMENTS | ist |
| INF\_N1\_INTERFACE\_FORCE | \_D3P\_Vector | INF\_NUM\_SEGMENTS | ist |
| INF\_N2\_INTERFACE\_FORCE | \_D3P\_Vector | INF\_NUM\_SEGMENTS | ist |
| INF\_N3\_INTERFACE\_FORCE | \_D3P\_Vector | INF\_NUM\_SEGMENTS | ist |
| INF\_N4\_INTERFACE\_FORCE | \_D3P\_Vector | INF\_NUM\_SEGMENTS | ist |
| INF\_N1\_CONTACT\_GAP | float | INF\_NUM\_SEGMENTS | ist |
| INF\_N2\_CONTACT\_GAP | float | INF\_NUM\_SEGMENTS | ist |
| INF\_N3\_CONTACT\_GAP | float | INF\_NUM\_SEGMENTS | ist |
| INF\_N4\_CONTACT\_GAP | float | INF\_NUM\_SEGMENTS | ist |
| INF\_SURFACE\_ENERGY\_DENSITY | float | INF\_NUM\_SEGMENTS | ist |

##### D3thdt DataType

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **CONVERSION** | **LENGTH** | **PARAMETER** |
| D3T\_NUM\_STATES | int | 1 | ignore |
| D3T\_TIMES | float | D3T\_NUM\_STATES | ignore |
| D3T\_NUM\_SHELL | int | 1 | ignore |
| D3T\_SHELL\_CONNECTIVITY\_MAT | D3P\_Shell | D3T\_NUM\_SHELL | ignore |
| D3T\_SHELL\_IDS | int | D3T\_NUM\_SHELL | ignore |
| D3T\_NUM\_SHELL\_PLOT | int | 1 | ignore |
| D3T\_SHELL\_IDS\_PLOT | int | D3T\_NUM\_SHELL\_PLOT | ignore |
| D3T\_SHELL\_MX\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_MY\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_MXY\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_QX\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_QY\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_NX\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_NY\_HISTORY | float | D3T\_NUM\_STATES | iuser |
| D3T\_SHELL\_NXY\_HISTORY | float | D3T\_NUM\_STATES | iuser |

#### How to use

##### Sample1.py

**Purpose: obtain resultant displacement for all the nodes and find maximum value.**

**3D scatterplot(x=shell\_nodes\_x, y=shell\_nodes\_y, z=shell\_nodes\_z, c=resultant displacement of shell nodes)**

**ist: last.**

from lsreader import D3plotReader, DataType as dt

import os

d3plot = os.path.join(os.getcwd(), 'd3plot')

dr = D3plotReader(d3plot)

num\_states = dr.get\_data(dt.D3P\_NUM\_STATES)

nodes\_initial\_coor = dr.get\_data(dt.D3P\_NODE\_INITIAL\_COORDINATES, ask\_for\_numpy\_array=True)

nodes\_coor = dr.get\_data(dt.D3P\_NODE\_COORDINATES, ist=num\_states-1, ask\_for\_numpy\_array=True)

disp = [(node[0]\*\*2+node[1]\*\*2+node[2]\*\*2)\*\*0.5 for node in (nodes\_coor-nodes\_initial\_coor)]

shells = dr.get\_data(dt.D3P\_SHELL\_ID\_CONNECTIVITY\_MAT, ask\_for\_numpy\_array=True)

nodes = shells[:, 2:].flatten()

nodes = np.unique(nodes)

nodes\_x = [nodes\_coor[node-1, 0] for node in nodes]

nodes\_y = [nodes\_coor[node-1, 1] for node in nodes]

nodes\_z = [nodes\_coor[node-1, 2] for node in nodes]

res = [disp[node-1] for node in nodes]

import matplotlib.pyplot as plt

fig = plt.figure()

ax = fig.add\_subplot(1, 1, 1, projection='3d')

scat = ax.scatter3D(nodes\_x, nodes\_y, nodes\_z, c=res, s=15,)

fig.colorbar(scat, label='Resultant Displacement')

ax.set\_zlim3d(-50, 50)

plt.show()

##### Sample2.py

**Purpose: extract Variable data for Multisolver.**

**State: 2**

import lsreader

from lsreader import D3plotReader

from lsreader import DataType as dt

from lsreader import D3P\_Parameter as dp

import os

d3plot = os.path.join(os.getcwd(), 'd3plot')

dr = D3plotReader(d3plot)

has\_ms\_data = dr.get\_data(dt.D3P\_HAS\_MS\_DATA)

if not has\_ms\_data:

    print("No Multisolver Data")

num\_ms\_datasets = dr.get\_data(dt.D3P\_MS\_NUM\_DOMAINS)

for dataset in range(num\_ms\_datasets):

    domain\_var\_ids = dr.get\_data(dt.D3P\_MS\_DOMAIN\_VARS\_LIST, index\_multisolver=dataset)

    for var in range(domain\_var\_ids.\_\_len\_\_()):

        sizevar = dr.get\_data(dt.D3P\_MS\_DOMAIN\_VAR\_LENGTH, index\_multisolver=dataset, ist=2)

        is\_scalar = dr.get\_data(dt.D3P\_MS\_VAR\_IS\_SCALAR, id\_var\_multisolver=domain\_var\_ids[var])

        is\_vector = dr.get\_data(dt.D3P\_MS\_VAR\_IS\_VECTOR, id\_var\_multisolver=domain\_var\_ids[var])

        is\_tensor = dr.get\_data(dt.D3P\_MS\_VAR\_IS\_TENSOR, id\_var\_multisolver=domain\_var\_ids[var])

        p = dp()

        p.ist=2

        p.index\_multisolver = dataset

        p.id\_var\_multisolver = domain\_var\_ids[var]

        if is\_scalar:

            svalue = dr.get\_data(dt.D3P\_MS\_DOMAIN\_DATA\_IN\_STATE, p)

            print("Value type: scalar, value[0]={}".format(svalue[0]))

        if is\_vector:

            vvalue = dr.get\_data(dt.D3P\_MS\_DOMAIN\_DATA\_IN\_STATE, p)

            print(

"Value type: vector, value[0].X()={}"

.format(vvalue[0].x())

)

        if is\_tensor:

            tvalue = dr.get\_data(dt.D3P\_MS\_DOMAIN\_DATA\_IN\_STATE, p)

            print(

"Value type: tensor, value[0].X()={}"

.format(tvalue[0].x())

)

##### Sample3.py

**Purpose: extract stress of shells by part.**

**State: 2**

**Ipt: 0**

**Part User Id: 3**

from lsreader import D3plotReader, DataType as dt

d3plot = os.path.join(os.getcwd(), 'd3plot')

dr = D3plotReader(d3plot)

num\_shells = dr.get\_data(dt.D3P\_NUM\_SHELL)

shell\_stress = dr.get\_data(

    dt.D3P\_SHELL\_STRESS, ist=1, ipt=0, ipart\_user=3

)

# do something with shell\_stress

##### Sample4.py

**Purpose: extract shell stress by part set**

**State: 2**

**Ipt: 0**

**Part set(user id): 1, 2**

from lsreader import D3plotReader, DataType as dt

import os

d3plot = os.path.join(os.getcwd(), 'd3plot')

dr = D3plotReader(d3plot)

num\_shells = dr.get\_data(dt.D3P\_NUM\_SHELL, ipartset\_user=[1, 2])

shell\_stress = dr.get\_data(dt.D3P\_SHELL\_STRESS, ist=2, ipt=0, ipartset\_use=[1, 2])

### BinoutReader

#### API Functions

class **BinoutReader**():

    def **\_\_init\_\_**(self, path):

        pass

* Purpose: Constructor.
* Input: path: binout name.
* Return: BinoutReader object.

Example: br = BinoutReader("binout/file/path")

@staticmethod

def **is\_valid**(path):

pass

* Purpose: Check if the path is correct
* Input: path: binout name(full path).
* Return: True or False.

@staticmethod

def **write**(path, x\_array, y\_array):

pass

* Purpose: Output the x\_array and y\_array to path.
* Input: path: binout name(full path).

x\_array: The array of X direction.

y\_array: The array of Y direction.

* Return: True.

def **get\_data**(self, type, param):

pass

* Purpose: Extract data.
* Input: type: type - enum the data variables' name in binout.

param: structure of description which is the advance setting for getting special data in binout.

* Return: data.

#### BINOUT\_Parameter

struct BINOUT\_Parameter

{

int id;

int ipt;

int nqt;

int npl;

int freq\_mode;

int cid;

int nodeset;

int rigidwall;

BINOUT\_IdType idtype;

BINOUT\_DataTypeOption 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
10. datatype\_option: the option for BINOUT\_DataTyp

#### DataType

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\_TRANSLATION,

BINOUT\_JNTFORC\_ID\_REVOLUTE,

/\*ID type in spcforc\*/

BINOUT\_SPCFORC\_SETID,

BINOUT\_SPCFORC\_ID,

/\*ID type in rwforc\*/

BINOUT\_RWFORC\_ID\_FORCES,

BINOUT\_RWFORC\_ID\_TRANSDUCER,

/\*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,

BINTOU\_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,

};

|  |  |  |  |
| --- | --- | --- | --- |
| name | conversion | length | parameters |
| 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\_TRANS\_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\_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\_AIR | double | BINOUT\_ABSTAT\_PBM\_NUM\_TIMESTEP | id, idtype: BINOUT\_ABSTAT\_PBM\_ID\_PBLAST or 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\_TIMESTEP | int | 1 | ignore |
| 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, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_PRESSURE | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_INTERNAL\_ENERGY | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_DM\_DT\_IN | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_DENSITY | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_DM\_DT\_OUT | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_TOTAL\_MASS | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_GAS\_TEMP | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_SURFACE\_AREA | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_REACTION | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_INFLACTOR\_E | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_ABSTATCPM\_ID\_CHAMBER |
| BINOUT\_ABSTATCPM\_TRANS\_KE | double | BINOUT\_ABSTATCPM\_NUM\_TIMESTEP | idtype = BINOUT\_ABSTATCPM\_ID\_BAG, BINTOU\_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 = BINTOU\_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 | BinoutStringArray | BINOUT\_CPMSENSOR\_NUM\_COMPONENT | ignore |
| 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\_INTERNAL\_ENERGY | double | BINOUT\_PGSTAT\_NUM\_TIMESTEP | id |
| 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\_T\_X | double | BINOUT\_DISBOUT\_NUM\_TIMESTEP | id |
| 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\_NUMBER | double | BINOUT\_DEMTRH\_NUM\_TIMESTEP | id, idtype |
| 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\_COORD\_Y | double | BINOUT\_PBLAST\_SENSOR\_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 |
| BINOUT\_PLLYOUT\_COMPONENTS | BinoutStringArray | BINOUT\_PLLYOUT\_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\_NUM\_TIMESTEP | id |
| 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\_Y | double | BINOUT\_NODFOR\_NUM\_TIMESTEP | id, idtype= BINOUT\_NODFOR\_ID\_GROUP |
| 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\_TIMESTEP | int | 1 | ignore |
| 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\_STRESS\_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\_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\_INERTIAS\_1ST\_DIRECTIONS\_X | double | BINOUT\_SSSTAT\_NUM\_TIMESTEP | systemid |
| 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\_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\_ENERGY | double | BINOUT\_GLSTAT\_TIME\_STEP | ignore |
| 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\_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\_NUM\_TIMESTEP | id |
| 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\_TRACER | int | 1 | ignore |
| BINOUT\_TRHIST\_TRACERS | unsigned int | BINOUT\_TRHIST\_NUM\_TRACER | ignore |
| BINOUT\_TRHIST\_NUM\_COMPONENT | int | 1 | ignore |
| BINOUT\_TRHIST\_COMPONENTS | BinoutStringArray | BINOUT\_TRHIST\_NUM\_COMPONENT | ignore |
| 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\_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\_NUM\_TIMESTEP | id |
| 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\_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\_NUM\_TIMESTEP | cid = contact id, id = 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\_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\_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\_AXIAL\_FORCE | double | BINOUT\_DCFAIL\_NUM\_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\_COMPONENTS | BinoutStringArray | BINOUT\_DEMRCFORC\_NUM\_COMPONENT | ignore |
| 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\_NUM\_TIMESTEP | id |
| 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\_IDS | usigned int | BINOUT\_SBTOUT\_NUM\_SLIPRING\_ID | ignore |
| 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\_VELOCITYRIGIDBODIES,  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\_TOTAL\_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\_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\_ORIENTATIONRIGIDBODIES, |
| 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\_ENERGY | 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\_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\_DISPLACEMENT\_Y | double | BINOUT\_JNTFORC\_NUM\_TIMESTEP, | id, idtype: 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\_DAMPING\_Y | double | BINOUT\_JNTFORC\_NUM\_TIMESTEP, | id, idtype: 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\_DEGREES\_DT | double | BINOUT\_JNTFORC\_NUM\_TIMESTEP, | id, idtype: 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\_STIFFNESS | double | BINOUT\_JNTFORC\_NUM\_TIMESTEP, | id, idtype: 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\_DEGREES\_DT | double | BINOUT\_JNTFORC\_NUM\_TIMESTEP, | id, idtype: 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\_FREQUENCY | 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\_TRANSLATIONAL\_DISP\_Z | double | BINOUT\_NODOUT\_SSD\_NUM\_FREQUENCY | id, freq\_mode, datatype\_option: BINOUT\_DATATYPE\_MODALCONTRIBUTATION |
| 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\_VELOCITY\_X | double | BINOUT\_NODOUT\_PSD\_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 or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_X | double | BINOUT\_RWFORC\_NUM\_TIMESTEP, | idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_NUM\_ID | int | 1 | idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_IDS | usigned int | BINOUT\_RWFORC\_NUM\_ID | idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_NUM\_NODESET | int | 1 | id, idtype = BINOUT\_RWFORC\_ID\_TRANSDUCER |
| BINOUT\_RWFORC\_NODESETS | usigned int | BINOUT\_RWFORC\_NUM\_NODESET | id, idtype = BINOUT\_RWFORC\_ID\_TRANSDUCER |
| BINOUT\_RWFORC\_NUM\_COMPONENT | int | 1 | idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_COMPONENTS | BinoutStringArray | BINOUT\_RWFORC\_NUM\_COMPONENT | idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_NORMAL\_FORCE | double | BINOUT\_RWFORC\_X | id, idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_FORCE\_X | double | BINOUT\_RWFORC\_X | id, idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_FORCE\_Y | double | BINOUT\_RWFORC\_X | id, idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| BINOUT\_RWFORC\_FORCE\_Z | double | BINOUT\_RWFORC\_X | id, idtype = BINOUT\_RWFORC\_ID\_FORCES or BINOUT\_RWFORC\_ID\_TRANSDUCER, |
| 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\_GROUPID | 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\_X | double | BINOUT\_ELOUTDET\_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 |
| BINOUT\_ELOUTDET\_NUM\_NPL | int | 1 | idtype = 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\_XX | double | BINOUT\_ELOUTDET\_NUM\_TIMESTEP | idtype=BINOUT\_ELOUTDET\_ID\_NODAVG, 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\_XY | 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\_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 |
| BINOUT\_ELOUT\_PSD\_IPTS | unsigned int | BINOUT\_ELOUT\_PSD\_NUM\_IPT | 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\_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\_PSD\_NUM\_FREQUENCY | id, idtype: 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\_NUM\_TIMESTEP | id |
| 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\_NUM\_TIMESTEP | id |
| 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\_IDS | unsigned int | BINOUT\_SPCFORC\_NUM\_FORCESETID | ignore |
| 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 | BinoutStringArray | BINOUT\_SWFORC\_NUM\_COMPONENT | ignore |
| 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 |

#### How to use

##### Sample1.py

**Purpose: obtain branches, component and ids, and get x\_array, y\_array.**

from lsreader import BinoutReader

from lsreader import BINOUT\_DataType as bdt

data\_path = "binout/data"

br = BinoutReader(data\_path)

# Get number of branch in binout file

num\_branch = br.get\_data(bdt.BINOUT\_NUM\_BRANCH)

print("Number of branches: {}".format(num\_branch))

# Get those branches in binout file

branches = br.get\_data(bdt.BINOUT\_BRANCHES)

for branch in branches:

print(branch, end=',')

print()

# Get number of ID in binout->nodout branch

num\_id = br.get\_data(bdt.BINOUT\_NODOUT\_NUM\_ID)

print("Number of ids: {}".format(num\_id))

# Get ID array in binout->nodout branch

ids = br.get\_data(bdt.BINOUT\_NODOUT\_IDS)

for id in ids:

print(id, end=',')

print()

# Get number of component in binout->nodout branch

num\_component = br.get\_data(bdt.BINOUT\_NODOUT\_NUM\_COMPONENT)

print("Number of components: {}".format(num\_component))

# Get those components in binout file

components = br.get\_data(bdt.BINOUT\_NODOUT\_COMPONENTS)

for component in components:

print(component, end=',')

print()

# Get number of time-step in binout->nodout branch

num\_timestep = br.get\_data(bdt.BINOUT\_NODOUT\_NUM\_TIMESTEP)

print("Number of timestep: {}".format(num\_timestep))

# Get X array in binout->nodout branch

x\_array = br.get\_data(bdt.BINOUT\_NODOUT\_X)

print("last time is {}".format(x\_array[num\_timestep-1]))

# Get X-Acceleration array of node-1787 in binout->nodout branch

y\_array = br.get\_data(bdt.BINOUT\_NODOUT\_X\_ACCELERATION, id=1787)

print("x-acceleration of node {0} at the last time is {1}".format(1787, y\_array[num\_timestep-1]))