

## Operator LIRE\_PLEXUS

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### 1 Goal

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To see the file of results to format IDEAS produced by software EUROPLEXUS.

Allows to recover a transitory field of fluid pressure in a piping calculated using a telegraphic hydrodynamic model (plane waves) of PLEXUS. The constant field of pressure definite by element in calculation EUROPLEXUS is project on a mechanical grid correspondent of *Code\_Aster* using the elements hulls (DKT or COQUE\_3D) and/or PIPE.

Product a concept of the type `evol_char`.

## 2 Syntax

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```
presplex [evol_char] = LIRE_PLEXUS

( ◇ UNIT          = / iunit ,           [I]
  ◇ FORMAT        = 'IDEAS',           [DEFECT]
  ◆ MAIL_PLEXUS   = mplexus ,           [GRID]
  ◆ GRID          = master degree ,     [GRID]
  ◆ MODEL         = modaster ,          [MODEL]
  ◆ / TOUT_ORDRE  = 'YES',
  / NUME_ORDRE    = lordre ,           [L_I]
  / LIST_ORDRE    = lenti ,            [LISTIS]
  / INST          = linst ,            [L_R]
  / LIST_INST     = linst ,            [LISTR8]
  ◇ | PRECISION   = / prec ,           [R]
  / 1.D-6,       [DEFECT]
  | CRITERION    = / 'RELATIVE',       [DEFECT]
  / 'ABSOLUTE',
  ◇ TITLE        = l_titre ,           [L_KN]
)

```

## 3 Operands

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### 3.1 Operands **FORMAT / UNIT**

- ◇ `FORMAT = 'IDEAS'`  
Reading of the file to format IDEAS.
- ◇ `UNIT = iunit`  
Logical number of unit of the file to the universal format IDEAS, by default 19.

### 3.2 Operand **MAIL\_PLEXUS**

- ◆ `MAIL_PLEXUS = mplexus`  
Telegraphic hydrodynamic grid of EUROPLEXUS on which one reads the field of pressure function of time.

### 3.3 Operand **GRID**

- ◆ `GRID = master degree`  
Grid for the calculation of *Code\_Aster* on which one projects the field of pressure read.

### 3.4 Operand **MODEL**

- ◆ `MODEL = modaster`  
Name of the model where are defined the types of finite elements affected on the grid of *Code\_Aster*.

### 3.5 Operands **TOUT\_ORDRE / NUME\_ORDRE / LIST\_ORDRE / INST / LIST\_INST / PRECISION / CRITERION**

Selection in a structure of data `result` [U4.71.00].

### 3.6 Operand **TITLE**

- ◇ `TITLE = l_titre`  
Title which one wants to give to the result [U4.03.01].

## 4 Examples

### 4.1 Example: reading of a grid EUROPLEXUS

One reads on universal file IDEAS (logical unit 19) the telegraphic hydrodynamic grid of EUROPLEXUS and one transforms it with the format of *Code\_Aster* writing on the unit 22. Grid EUROPLEXUS with the format of *Code\_Aster* then is read again and placed in the concept of the type grid.

```
PRE_IDEAS (UNITE_IDEAS=19, UNITE_MALLAGE=22)  
mplexus = LIRE_MALLAGE ( UNITE=22,)
```

### 4.2 Example: creation of one result of type 'evol\_char'

One reads on universal file IDEAS the field of fluid pressure function of time. This field, definite on the telegraphic hydrodynamic grid of EUROPLEXUS (to the format of *Code\_Aster*), is then project on the mechanical grid of *Code\_Aster* for every moment of definition.

```
presplex = LIRE_PLEXUS ( UNIT          = 19,  
                        FORMAT        = 'IDEAS',  
                        MAIL_PLEXUS    = mplexus ,  
                        GRID           = master degree ,  
                        MODEL          = modaster ,  
                        TOUT_ORDRE     = 'YES',  
                        )
```

### 4.3 Example: use of result of type 'evol\_char'

The concept 'evol\_char' previously definite is used under keyword EVOL\_CHAR to manufacture a loading.

```
tank = AFFE_CHAR_MECA ( MODEL = modaster ,  
                      ...  
                      EVOL_CHAR = presplex ,  
                      )
```

Other examples of use of the operator `LIRE_PLEXUS` can be consulted in the command files of the CAS-test ZZZZ112, modelings A, B, C [V1.01.112].