Operator LIRE_PLEXUS

1 Goal

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

```
presplex [evol_char] = LIRE_PLEXUS

              ( ◊  UNIT            =  /   iunit ,          [I]
                                      / 19,                [DEFECT]
                ◊  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

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_MAILLAGE=22)
mplexus = LIRE_MAILLAGE ( UNITE=22,)
```

4.2 Example: creation of one result of type 'evol_char'

One reads on universal file IDEAS the fluid field of 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].