Code_Aster

Titre : Opérateur LIRE_PLEXUS
Responsable : POTAPOV Serguei

Version default

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Clé : U7.02.11 Révision :
a2c4de544005

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`.

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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]

          )
```

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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].

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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].