Operator POST_COQUE

1 Goal

To extract from the efforts or the deformations on the elements hulls at a given moment. These extractions take place on whole of points introduced by the user by their coordinates and their position into the thickness. This order produces one table containing a line by point of postprocessing.
2 Syntax

```
[table] = POST_COQUE  (

  # keyword simple

  ♦ RESULT          = resu,    / [evol_elas]
      / [evol_noli]

  ◊ / NUME_ORDRE    = / nuor,  [I]
      / INST         = / inst,  [R]

  ♦ CHAM            = / 'EFFORT',
      / 'DEFORMATION',

  # keyword factor

  ♦ COOR_POINT     = _F ( ♦ COOR    = (X, there, Z, H,), [l_R]
                      ),)
```
3 Operands

3.1 Operand RESULT

♦ RESULT = resu,

Name of a concept result of the type evol_elas or evol_noli.

3.2 Operands NUME_ORDRE / INST

◊ / INST: moment of calculation of postprocessing

◊ / NUME_ORDRE: sequence number of the fields post-treaties

If nor INST nor NUME_ORDRE are not informed, by default one will treat the field corresponding to the first calculated moment.

3.3 Operand CHAM

♦ CHAM = `/EFFORT`

/ `DEFORMATION`

`EFFORT`: field EFGE_ELNO containing 8 components:

- 3 efforts of membrane $N_{xx}, N_{yy}, N_{xy}$
- 3 bending stresses $M_{xx}, M_{yy}, M_{xy}$
- the 2 efforts cutting-edges $T_{x}, T_{y}$

`DEFORMATION`: field containing the 6 components of the tensor of the deformations.

The deformations in the thickness are calculated starting from the deformations generalized of average surface DEGE_ELNO $(e_{xx}, e_{yy}, e_{xy}, k_{xx}, k_{yy}, k_{xy}, y_{x}, y_{y})$ where:

- $(e_{xx}, e_{yy}, e_{xy})$ the deformations of membrane indicate,
- $(k_{xx}, k_{yy}, k_{xy})$ the deformations of inflection indicate,
- $(y_{x}, y_{y})$ the deformations associated with transverse shearings indicate.

The deformations in the thickness (tensor 3D) are obtained by the formulas:

- $e_{xx} = e_{xx} + h k_{xx}$
- $e_{yy} = e_{yy} + h k_{yy}$
- $e_{xy} = e_{xy} + h k_{xy}$
- $2 e_{xz} = y_x$
- $2 e_{yz} = y_y$

3.4 Keyword factor COOR_POINT

♦ COOR_POINT = _F {

3.4.1 Operand COOR

♦ COOR= (X, there, Z, H,)

$x, y, z$ : coordinates of the point, positioned on neutral fibre

$h$ : position of the point in the thickness of the hull

Warning : The translation process used on this website is a "Machine Translation". It may be imprecise and inaccurate in whole or in part and is provided as a convenience.

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(-e/2 \leq h \leq +e/2 \ , \text{where} \ e \ \text{is the thickness})

If CHAM = 'EFFORT', \ h \ is ignored, the efforts being calculated by integration of the constraints in the thickness. If the user returns one \ h \ not no one one transmits a message of alarm to indicate that he is not taken into account.

4 Example

4.1 Data

\begin{verbatim}
= POST_COQUE (RESULTAT=resu, CHAM='EFFORT',
INST=0.5,
    COOR_POINT= (_F (COOR= (.5, .5, 0.),),
         _F (COOR= (.4, .4, 0.),),
         _F (COOR= (.3, .3, 0.),),
         _F (COOR= (.2, .2, 0.),),
         _F (COOR= (.1, .1, 0.),)),
)

IMPR_TABLE (TABLE=tab)
\end{verbatim}

4.2 Result

#ASTER 10.01.02 CONCEPT .9000036 CALCULATE THE 12/21/2009 AT 14:29: 33 OF TYPE
#TABLE_SDASTER

\begin{verbatim}
ENTITLE  NOM_CHAM  NUME_ORDRE  INST  ABSC_CURV  COOR_X COOR_Y  COOR_Z  NXX  NYY  NXY  MXX  MYY  MXY  QX  QY
l.coupe1  EFGE_ELNO  1  5.00000E-01  0.00000E+00  5.00000E-01  5.00000E-01  0.00000E+00  0.00000E+00  0.00000E+00  1.39225E+03  1.71917E+02  7.31598E+01  0.00000E+00  0.00000E+00
l.coupe2  EFGE_ELNO  1  5.00000E-01  0.00000E+00  4.00000E-01  4.00000E-01  0.00000E+00  0.00000E+00  0.00000E+00  1.60861E+03  2.21319E+02  4.51512E+01  0.00000E+00  0.00000E+00
l.coupe3  EFGE_ELNO  1  5.00000E-01  0.00000E+00  3.00000E-01  3.00000E-01  0.00000E+00  0.00000E+00  0.00000E+00  1.77859E+03  2.64092E+02  2.45955E+01  0.00000E+00  0.00000E+00
l.coupe4  EFGE_ELNO  1  5.00000E-01  0.00000E+00  2.00000E-01  2.00000E-01  0.00000E+00  0.00000E+00  0.00000E+00  1.89431E+03  2.95034E+02  1.07022E+01  0.00000E+00  0.00000E+00
l.coupe5  EFGE_ELNO  1  5.00000E-01  0.00000E+00  1.00000E-01  1.00000E-01  0.00000E+00  0.00000E+00  0.00000E+00  1.96526E+03  3.14826E+02  2.63826E+01  0.00000E+00  0.00000E+00
\end{verbatim}