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_ELNOcontaining 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 $(e_{xx}, e_{yy}, e_{xy}, \kappa_{xx}, \kappa_{yy}, \kappa_{xy}, \gamma_x, \gamma_y)$ where:

- (e_{xx}, e_{yy}, e_{xy}) the deformations of membrane indicate,
- $(\kappa_{xx}, \kappa_{yy}, \kappa_{xy})$ the deformations of inflection indicate,
- (γ_x, γ_y) the deformations associated with transverse shearings indicate.

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

- $\epsilon_{xx} = e_{xx} + h\kappa_{xx}$
- $\epsilon_{yy} = e_{yy} + h\kappa_{yy}$
- $\epsilon_{xy} = e_{xy} + h\kappa_{xy}$
- $2\epsilon_{xz} = \gamma_x$
- $2\epsilon_{yz} = \gamma_y$

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

($-e/2 \leq h \leq +e/2$, where e 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

```
= 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)
```

4.2 Result

```
#ASTER 10.01.02 CONCEPT .9000036 CALCULATE THE 12/21/2009 AT 14:29: 33 OF TYPE
#TABLE_SDASTER
 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    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    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    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    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    0.00000E+00    1.96526E+03
3.14826E+02  2.63826E+00  0.00000E+00  0.00000E+00
```