cham_no_DEPL_R

Operator DEPL_INTERNE

1 Goal

To calculate the field inside a macronutrient. Two cases can exist: the macronutrient was obtained by *static under-structuring*, or the macronutrient was obtained by condensation of measurement for a calculation of *structural modification* (see U4.62.01).

In the case of a static substructure : the result of the order is a field of displacement (cham_no) on the grid associated with the macronutrient (i.e. grid of lower level). One can reiterate this operation until the grids moreover low level (those which contain the finite elements).

This stage can be regarded as a postprocessing on the macronutrient. It can be carried out only after the total resolution. The field thus calculated can be then used by the operator CALC_CHAMP (or other operators) to calculate the constraints,….

When a macronutrient gave rise to several substructures, the fields of displacements in these substructures are restored on the grid subjacent with the macro - element. There is thus change of reference mark of the field of displacement if under - structure were turned.
If the substructure were turned of $+\alpha$, the field of displacement is turned of $-\alpha$.
This field of displacement is then coherent with the grid and one can connect the post - treatments: calculation of the constraints,…

If the macronutrient is obtained by condensation of measurement for a calculation of structural modification, the result of the order is a structure of data of the type result (evol_elas, dyna_trans, dyna_harmo, mode_meca) on the grid sensor (points of measurement). In this structure of data the fields of displacement are calculated corresponding to NOM_CHAM = 'DEPL'

Contents

2 Syntax

```
U ( * )   =  DEPL_INTERNE     (

              ♦ DEPL_GLOBAL  =     ug ,          / [cham_no]
                                                /  [evol_elas]
                                                /  [dyna_trans]
                                                /  [dyna_harmo]
                                                /  [mode_meca]
                                                /  [mode_meca_c]

              ♦  SUPER_MESH  =     e-mail ,        [mesh]

              ◊  NOM_CAS     =  /  nocas  ,        [K8]
                                 / '' ,          [DEFECT]

                                        )
```

If ug of type cham_no_DEPL_R then(*) = cham_no_DEPL_R
If ug of type evol_elas then(*) = evol_elas
If ug of type dyna_trans then(*) = dyna_trans
If ug of type dyna_harmo then(*) = dyna_harmo
If ug of type mode_meca then(*) = mode_meca
If ug of type mode_meca_c then(*) = mode_meca_c

3 Operands

3.1 Operand DEPL_GLOBAL

♦ DEPL_GLOBAL = ug

If the macronutrient is obtained by static under-structuring:
ug is the name of the field of displacement obtained at the time of the resolution at the total level on the macronutrient.

If the macronutrient is obtained by condensation of measurement for a calculation of structural modification:
ug is the name of the structure of data of the type result obtained during a calculation on the coupled model (total level). In this structure of data, one uses, for cha that sequence number the field (of displacement) correspondent with NOM_CHAM='DEPL'.

3.2 Operand SUPER_MESH

♦ SUPER_MESH = e-mail

One gives the name here of supermesh which supports the substructure (cf operator DEFI_MAILLAGE [U4.23.01]).

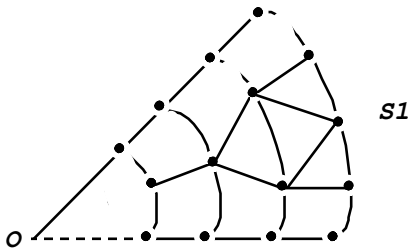
3.3 Operand NOM_CAS

◊ NOM_CAS = nocas

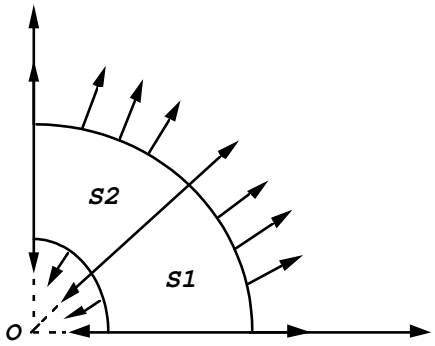
nocas is the name of the loading case corresponding to ug. This data is essential if there exists a loading distributed on substructure. It is to the user to make sure that the field ug corresponds well to the loading case nocas.
The names of case charges possible are those defined in the macronutrient; i.e. those given via the keyword CAS_CHARGE/NOM_CAS orders MACR_ELEM STAT and MACR_ELEM_DYNA.
If nocas = ' ', the field of displacement was calculated without loading distributed on under - structure.
This operand is not used if the macronutrient is obtained by condensation of measurement.

4 Example

- Grid of level 1: my, macronutrient: S1



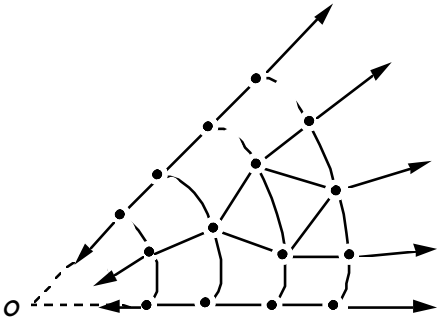
- Grid of level 2: 2 substructures: S1 and S2 (obtained by rotation of S1).



Displacement ug :

- known on the external nodes of the substructures,
- it is supposed radial (compared to O).

- u2 = DEPL_INTERNE (DEPL_GLOBAL = ug, SUPER_MAILLE = S2)



Displacement u2 :

- known on all the nodes of my,
- there remains radial because the field was turned of - 45° to be coherent with the grid.