

Operator POST_DECOLLEMENT

Summary:

This operator of postprocessing calculates the surface of contact or taken off between the foundation raft and the ground of a calculation of interaction ground/structure (ISS), carried out with the operator `DYNA_NON_LINE`.

This operator produces a table of the type `table_sdaster` containing the percentage of separation at every moment.

1 Syntaxe

```
[table_sdaster] = POST_DECOLLEMENT (  
    ♦ RESULT = resu, [evol_noli]  
    ♦ NOM_CHAM = / field, [K8]  
                  / 'DEPL', [DEFECT]  
    ♦ NOM_CMP = / comp, [K8]  
                  / 'DZ', [DEFECT]  
    ♦ GROUP_MA = gma, [K8]  
    ♦ INFORMATION = / 1, [DEFECT]  
                  / 2  
)
```

2 Operands

2.1 Operand RESULT

Simple keyword allowing to recover the structure of data result of the type `evol_noli` who contains inter alia the field of displacement on the surface of the foundation raft at the various moments.

2.2 Operand NOM_CHAM

Simple keyword allowing to collect the name of the field. It is by default about `'DEPL'`, the field of displacement.

2.3 Operand NOM_CMP

Simple keyword allowing to inform the name of the component of the field of displacement which highlights separation. By default, it acts of `'DZ'`.

2.4 Operand GROUP_MA

Simple keyword allowing to recover the group of surface meshes of the foundation raft.

2.5 Operand INFORMATION

```
♦ INFORMATION = /1, [DEFECT]  
                /2,
```

Level of messages in the file `'MESSAGE'`.

If `INFORMATION = 2`, then the table produced by this operator is printed in the file `'MESSAGE'`.

3 Principle of the macro-order

The operator `POST_DECOLLEMENT` carry out the following actions:

- calculate the entire surface of the foundation raft: she calls on the order `POST_ELEM/INTEGRALE` to determine the surface of the group of meshes provided to the operand `GROUP_MA`. This calculation requires the creation of a model 2D tiny room to the group of meshes `GROUP_MA` and the creation of a unit field to the nodes of this group before being integrated.
- traverses the moments of the SD Résultat provided to the operand `RESULT` for:
 - there to extract the component `NOM_CMP` field displacement `NOM_CHAM` at the moment in progress,
 - to define a nodal field whose values are worth 0 with the negative values of `NOM_CMP` field `NOM_CHAM`, and 1 with the strictly positive values,
 - determine the surface of the foundation raft whose values of the preceding field are worth 1,
 - calculate the report of surfaces to obtain the percentage of separation foundation raft/ground.

If this operator were developed to calculate the surface of separation of a foundation raft on the ground in calculations of interaction ground-structure, it can be used at other ends, on fields other than a field of displacement.

4 Example

This example is extracted from the CAS-test `zzzz200d`: one is interested in the percentage of separation following axis Z of the group of mesh 'SRADIER' corresponding to the surface of the foundation raft.

```
TB=POST_DECOLLEMENT (RESULTAT=EVOL,  
                      NOM_CHAM=' DEPL',  
                      NOM_CMP=' DZ',  
                      GROUP_MA=' SRADIER',  
                      INFO=2)
```

An extract of the table below is presented TB :

INST	%DECOL
3.12000E+00	0.00000E+00
3.12500E+00	0.00000E+00
3.13000E+00	0.00000E+00
3.13500E+00	6.11108E-01
3.14000E+00	2.40852E+00
3.14500E+00	2.40852E+00
3.15000E+00	2.40852E+00
3.15500E+00	2.40852E+00
3.16000E+00	2.40852E+00
3.16500E+00	6.11108E-01
3.17000E+00	0.00000E+00
3.17500E+00	0.00000E+00
3.18000E+00	0.00000E+00