

## Operator REST\_REDUIT\_COMPLET

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The goal of the operator is to rebuild the solutions on a complete model starting from a scale model.

The operator rebuilds one `evol_ther` or one `evol_noli` starting from an empirical base (see [U4.67.01], operator `DEFI_BASE_REDUITE`) and of the result of a reduced calculation.

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## 1 Syntax

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```
evol = REST_REDUIT_COMPLET (

    ♦ MODEL                = model                [modele_sdaster]
    ♦ RESULTAT_REDUIT      = base2,                [resultat_sdaster]
    ♦ CHAM_GD              = _F (
        ♦ NOM_CHAM         = /`DEPL`,              [TXM]
                                /`TEMP`,
                                /`SIEF_NOEU`,
                                /`FLUX_NOEU`,
                                /`SIEF_ELGA`,
                                /`VARI_ELGA`,
        ♦ BASE              = base,                [mode_empi]
        ♦ OPERATION        = /`GAPPY_POD`,        [TXM]
                                /`COMB`,
        ♦ GROUP_NO_INTERF  = grno,                [grno]
    ),
    ♦ TABL_COOR_REDUIT     = tabl_coor ,          [ table ]
    ♦ TITLE                 = title,              [l_Kn]
    ♦ INFORMATION          = /1,                  [DEFECT]
                                /2,
)
)
```

## 2 Operands

### 2.1 Operand RESULTAT\_REDUIT

◆ RESULTAT\_REDUIT = base2, [resultat\_sdaster]

This keyword gives the structure of data result (evol\_ther or evol\_noli) who comes from the calculation reduced with THER\_NON\_LINE or STAT\_NON\_LINE. This structure of data contains all the necessary information to rebuild the results on model given by the keyword MODEL.

### 2.2 Operand MODEL

◆ MODEL = model [modele\_sdaster]

NRom of the model on which will be rebuilt the structure of data result. It must be different from the model on which the structure of data result rests RESULTAT\_REDUIT.

### 2.3 Keyword factor CHAM\_GD

```
◆ CHAM_GD = F (
  ◆ NOM_CHAM = / 'DEPL' , [TXM]
              / 'TEMP' ,
              / 'SIEF_NOEU' ,
              / 'FLUX_NOEU' ,
              / 'SIEF_ELGA' ,
              / 'VARI_ELGA' ,
  ◆ BASE = base, [mode_empi]
  ◆ OPERATION = / 'GAPPY_POD' , [TXM]
                / 'COMB' ,
  ◇ GROUP_NO_INTERF = grno, [grno])
```

This keyword factor répétable makes it possible to define which fields must be rebuilt and how.

NOM\_CHAM give the type of field to be rebuilt. The current list is exhaustive (one cannot rebuild a field who does not belong to this list) the order prohibited to rebuild a field which does not exist in the initial structure of data given by RESULTAT\_REDUIT.

Each rebuilt field needs its empirical base given by the keyword BASE (calculated by DEFI\_BASE\_REDUIITE). Checks of coherence are made between the base given by the user and the rebuilt field.

A field can be rebuilt in two manners by the keyword OPERATION :

- By "modal" recombination: it is simply the sum balanced of the empirical modes by the reduced coordinates (see TABL\_COOR\_REDUIT).

- By Gappy-POD. The operation consists in reconstituting the coordinates reduced by minimizing the difference between the field partially calculated on the reduced field (see orders THER\_NON\_LINE and STAT\_NON\_LINE) and to then recompute the complete field on the field by linear combination.

The keyword GROUP\_NO\_INTERF give Groupe of nodes defining the interface the reduced field and the rest of the model (see orders THER\_NON\_LINE and STAT\_NON\_LINE)

### 2.4 Operand TABL\_COOR\_REDUIT

◇ TABL\_COOR\_REDUIT = tabl\_coor ,

Lorsqu' one Recalcule a field by modal combination, it is necessary to have the reduced coordinates of calculation. These coordinates are stored in a structure of data table of name 'COOR\_REDUIT'

who is attached to structure of data result. One can recover it via the operator `RECU_TABLE`. For example:

```
coorredp=RECU_TABLE (CO=resunl, NOM_TABLE=' COOR_REDUIT')
```

But if you recover the empirical base previously calculated by an operator like `LIRE_RESU` (in particular with format `MED`), this table is not available. The operator `TABL_COOR_REDUIT` thus allows to give it to `REST_REDUIT_COMPLET`.

It is thus necessary to have saved this table upstream at the same time as the non-linear result (by one `IMPR_TABLE`), then to recover it (by one `LIRE_TABLE`) to give it to `REST_REDUIT_COMPLET`.

## 2.5 Structure of output data

The structure of output data is one `sd_resultat` standard of `code_aster`.