Operator REST_COND_TRAN

1 Goal

To restore in the physical base of complete models of the transitory results of evolutions on condensed models.

This operator allows, starting from transitory results of evolutions into non-linear on condensed models, to get another result of transitory evolution on a more complete model.

The produced concept is a concept of the type dyna_trans in all the possible cases:

- following a non-linear transitory calculation evol_noli hasvec resolution about modal base of projection. One restores then on the complete physical model starting from this modal base entered by the keyword BASE_MODALE.
- following a linear transitory calculation dyna_trans or non-linear evol_noli on a mixed model composed of finite elements affected by a possibly non-linear behavior and macronutrients condensing of the models affected by a linear behavior. One restores then on one of the linear physical models entered by the keyword MACR_ELEM_DYNA .

2 Syntax

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resphy  = REST_COND_TRAN                                    [dyna_trans]
                                                            [evol_noli]
          (  ◊  reuse =   resphy,                           [dyna_trans]
                                                            [evol_noli]
             ♦  RESULT =  evol,                           [dyna_trans]
                                                            [evol_noli]
             ◊  RESU_FINAL = resphy                         [dyna_trans]
                                                            [evol_noli]
             ♦  /   BASE_MODALE =    bamo,                  [mode_meca]
                    ◊  TYPE_RESU =   |  'EVOL_NOLI',
                                     |  'DYNA_TRANS',       [DEFECT]
                    ◊  CHAM_MATER = chmat,                  [cham_mater]
                    ◊  CARA_ELEM  = carac,                  [cara_elem]

                /   MACR_ELEM_DYNA = mael,                  [macr_elem_dyna]

                ◊  /   TOUT_ORDRE =  'YES',
                   /    NUME_ORDRE = num,                       [l_I]
                   /   TOUT_INST =   'YES',
                   /   LIST_INST =   list,                      [listr8]
                   /   INST      =   inst,                      [l_R]

                ◊  /   TOUT_CHAM =   'YES',
                   /   NOM_CHAM  =    | 'DEPL',
                                      | 'QUICKLY',
                                      | 'ACCE',                 [DEFECT]),

                ◊  Interpol =    /   'FLAX',
                                 /   'NOT',                     [DEFECT]

                ◊  CRITERION =   /   'ABSOLUTE',
                              /   'RELATIVE,                        [DEFECT]

                ◊   PRECISION = /   prec,                       [R]
                                /   1.E-06,                     [DEFECT]


                              )
```

3 Operands

3.1 Operand RESULT

♦ RESULT = evol
Result of transitory evolution into non-linear on models with modal condensation allowing to get another result of transitory evolution on a more complete model. Product of a calculation carried out by DYNA_LINE_TRAN or DYNA_NON_LINE.

3.2 Operand RESU_FINAL

◊ RESU_FINAL = resphy
If this operand is indicated, the evolution of the transitory result of evolution on the complete model can be supplemented by the moments of the concept entered by the operand RESULT and the concept result is then D-entering.

3.3 Operands BASE_MODALE/MACR_ELEM_DYNA

♦ / BASE_MODALE
Concept of the type mode_meca containing a base of modes of projection for the resolution of a non-linear transitory calculation evol_noli with the keyword PROJ_MODAL in DYNA_NON_LINE. One restores then on the complete physical model starting from this modal base entered here by this keyword. An example of restitution of a result dyna_trans is given in test SDNV107A. One can also supplement the result restored on the complete model in order to get a result of the type evol_noli : an example is given in test SDNV107C.

/ MACR_ELEM_DYNA
This keyword makes it possible to introduce the name of a dynamic macronutrient calculated on part of model on which one will carry out the restitution on physical basis. Its data is necessary when this macronutrient is used as super-mesh of substructures defined by the keyword AFFE_SOUS_STRUC in the mixed model, also including classical finite elements, on which one calculated the linear evolution or non-linear entry behind the keyword RESULT. An example is given in tests MISS06B (non-linear) and MISS06C (linear iterative).

3.4 Operands TYPE_RESU / CHAM_MATER/CARA_ELEM

If the operand BASE_MODALE is well informed, it is possible to supplement the result restored on the complete model in order to get a result of the type evol_noli. It is then necessary to specify TYPE_RESU=' EVOL_NOLI'. To calculate the fields 'SIEF_ELGA' and 'VARI_ELGA' on the part of condensed model linear, it is then necessary to specify the concepts indicated by the operands CHAM_MATER and CARA_ELEM if they exist for the complete model.

3.5 Operands TOUT_ORDRE/NUME_ORDRE/TOUT_INST/LIST_INST/INST

◊ / TOUT_ORDRE = 'YES'
To restore on all the orders of the concept evol.

/ NUME_ORDRE = num
List of entireties containing the numbers of the orders on which the restitution takes place.

/ TOUT_INST = 'YES'

If one wishes to restore over every moment contained in the result evol.

/ LIST_INST = list
List of real crescents of the type listr8 containing the moments for which one wishes to carry out the restitution.

/ INST = inst
List of real containing the moments over which the restitution takes place.

For a transitory calculation, one checks that the moments requested by the option LIST_INST are well in the field of definition of result evol.

The results at one unspecified moment can be obtained by linear interpolation between the two moments results of calculation actually contained by result evol.

3.6 Operands TOUT_CHAM/NOM_CHAM

◊ / TOUT_CHAM = 'YES'

Allows to restore the fields of reference symbol DEPL, QUICKLY and ACCE contents in the result evol.

/ NOM_CHAM = nomcha

List of the reference symbols of field which one wishes to restore: 'DEPL','QUICKLY','ACCE'.

3.7 Operand Interpol

◊ Interpol =

'FLAX': an interpolation is authorized between two moments; this interpolation is usable only between two moments of calculation, but can lead to errors if the two moments of filing [U4.53.21] are separated from a very long time with respect to the periods of the studied phenomena.
'NOT': the restitution must be made *stricto sensu*.

3.8 Operands PRECISION/CRITERION

◊ PRECISION = prec

◊ CRITERION =

When Interpol is worth 'NOT' indicate with which precision the research of the moment to be restored must be done

'ABSOLUTE': interval of research [Inst - prec, Inst + prec],
'RELATIVE': interval of research [(1 - prec).Inst, (1 + prec) . Inst]
Inst being the moment of restitution.