Code_Aster

Version default

Titre : Opérateur REST_COND_TRAN
Responsable : Albert ALARCON

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Operator `REST_COND_TRAN`

1 Drank

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

This operator allows, from transitory results of evolutions into nonlinear on condensed models, to obtain another result transitory evolution on a more complete model.

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

- following a nonlinear transient computation `evol_noli` with resolution about modal base of projection. One restores then on the model physical complete from this modal base entered by key word `BASE_MODALE`.
- following a linear dyna_trans `or` nonlinear transient computation `evol_noli` on a mixed model composed of finite elements affected by a possibly nonlinear behavior and macro-elements condensing of the models affected by a linear behavior. One restores then on one of the linear physical models entered by key word `MACR_ELEM_DYNA` .

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2   Syntax

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

              /MACR_ELEM_DYNA =mael ,                  [macr_elem_dyna]

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

              ◊/TOUT_CHAM      = ' OUI',
               /NOM_CHAM      = |  ' DEPL',
                               |  ' VITE',
                               |  ' ACCE',                  [DEFAULT]),

            ◊   INTERPOL =        "LIN",
                          /   "NON",                        [DEFAULT]

            ◊   CRITERE =     "ABSOLU",
                          /  "RELATIF,                      [DEFAULT]

            ◊   accuracy =/prec    ,                           [R]
                         /1.E-06   ,                       [DEFAULT]


                          )
```

3 Operands

3.1 Operand RESULTAT

♦ RESULTAT = evol

Result of transitory evolution into nonlinear on models with modal condensation allowing to obtain another result transitory evolution on a more complete model. Product of a computation 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 result of transitory evolution on the model complete can be supplemented by times of the concept entered by operand RESULTAT and the result concept is then D-entering.

3.3 Operands BASE_MODALE/MACR_ELEM_DYNA

♦ / BASE_MODALE

Concept of the mode_meca type containing a base of modes of projection for the resolution of a nonlinear transient computation evol_noli with key word PROJ_MODAL in DYNA_NON_LINE. One restores then on the model physical complete from this modal base entered here by this key word. An example of restitution of one result dyna_trans is given in test SDNV107A. One can also supplement result restored on the model complete one in order to obtaining result evol_noli type : an example is given in test SDNV107C.

/ MACR_ELEM_DYNA

This key word makes it possible to introduce the name of a dynamic macro-element calculated on part of model on which one will carry out the restitution on physical base. Its data is necessary when this macro-element is used like substructure super-mesh defined by key word AFFE_SOUS_STRUC in the model mixed, including also of the finite elements classical, on which calculated the linear evolution or nonlinear entry behind key word RESULTAT. An example is given in tests MISS06B (nonlinear) and MISS06C (linear iterative).

3.4 Operands TYPE_RESU /CHAM_MATER/CARA_ELEM

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

3.5 Operands TOUT_ORDRE/NUME_ORDRE/TOUT_INST/LIST_INST/INST

◊/TOUT_ORDRE = "OUI'

to restore orders of the concept evol on all the.

/NUME_ORDRE = num

List of integers containing the numbers of the orders on which the restitution takes place.

/TOUT_INST = "OUI'

If one wishes on all to restore urgent contents as a result the evol.

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/LIST_INST   = list
> Lists increasing realities of listr8 `type` containing times for which one wishes to carry out the restitution.

/ INST = inst
> List of realities containing times over which the restitution takes place.

For a transient computation, it is checked that the times required by option LIST_INST are well in the field of definition of result `the evol`.

The results at one unspecified time can be obtained by linear interpolation between the two times results of computation actually contained by result `the evol`.

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3.6 Operands `TOUT_CHAM/NOM_CHAM`

◊/TOUT_CHAM   = "OUI'

> Makes it possible to restore the fields of symbolic name DEPL, QUICKLY and ACCE contained as a result the evol.

/NOM_CHAM = nomcha

> List of symbolic names of field which one wishes to restore: "DEPL", "QUICKLY", "ACCE".

3.7 Operand `INTERPOL`

◊INTERPOL =

"LIN":   an interpolation is authorized between two times; this interpolation is usable only between two times of computation, but can lead to errors if two times of archivage [U4.53.21] are separated from a very long time with respect to the periods of the studied phenomena.

"NON":   the restitution must be made *stricto sensu*.

3.8 Operands `accuracy/CRITERE`

◊PRECISION   = prec

◊CRITERE   =

> When INTERPOL is worth "NON" indicates with which accuracy the search of time to be restored must be made

"ABSOLU":   interval of search [Inst - prec, Inst + prec],

"RELATIF":   interval of search [(1 - prec). Inst, (1 + prec) . Inst]
             Inst being the time of restitution.