Code_Aster

Titre : Introduire un nouveau degré de liberté et les cond[...]
Responsable : PELLET Jacques

Version default

Date : 24/06/2016 *Page : 1/4*
Clé : D5.03.03 *Révision :*
cc6169847ed0

To introduce a new degree of freedom and boundary conditions associated

Summary:
What should it be made when one adds a new degree of freedom in one of the sizes DEPL_R, TEMP_R or PRES_C ?

In particular, that must one make so that one can "force" this degree of freedom by dualized linear relations (AFFE_CHAR_MECA for example) or eliminated (AFFE_CHAR_CINE) ?

Code_Aster

Version default

Titre : Introduire un nouveau degré de liberté et les cond[...] *Date : 24/06/2016* *Page : 3/4*
Responsable : PELLET Jacques *Clé : D5.03.03* *Révision* :
cc6169847ed0

2 Example joining together the three stages to introduce the degree of freedom, `GRX` (warping of the beams).

2.1 Catalogue sizes `Commons/physical_quantities.py`

It is enough to add the new component in the tuple:

```
list_cmp_depl= (
    'DX',           'DY',           'DZ',           'DRX',          'DRY MARTINI',
'DRZ',
    'GRX',          'GLIS',         'NEAR',         'PRE [2]',      'TEMP',         'PHI',
    'DH',           'H1X',          'H1Y',          'H1Z',          'H1PRE1',       'H2X',
```

2.2 Modification of the catalogue of element: `Elements/d_depl_r.py`

It is enough to add the new component in the tuple:

```
for cmp in (
    'DH', 'DRX', 'DRY MARTINI', 'DRZ', 'DX', 'DY', 'DZ', 'E1X', 'E1Y', 'E1Z', 'E2X', 'E2Y',
'E2Z',
    'E3X', 'E3Y', 'E3Z', 'E4X', 'E4Y', 'E4Z', 'GLIS', 'GONF', 'GRX', 'H1PRE1',…
```

2.3 Modification of the catalogues of order (`AFFE_CHAR_XXX/_C/_F` and `AFFE_CHAR_CINE/_F`)

Let us take the example of the order `AFFE_CHAR_MECA`. If one wants to allow to block it degree of freedom **GRX**, this name should be added (**GRX**) at various places of the catalogue, as one can see it below.

```
#& MODIFICATION ORDERS  DATE 7/20/2010
…
AFFE_CHAR_MECA=OPER (nom= " AFFE_CHAR_MECA", op=   7, sd_prod=char_meca,
                fr= " Assignment of loads and boundary conditions…
                 reentrant=',
        …
        DDL_IMPO        =FACT (statut=' f', max=' ** ',
            …
            regles= (AU_MOINS_UN ('ALL', 'GROUP_MA', 'MESH', 'GROUP_NO', 'NODE'),
                    AU_MOINS_UN ('DX', 'DY', 'DZ', 'DRX', 'DRY MARTINI', 'DRZ', 'GRX',
'NEAR', 'PHI',
                        'TEMP', 'PRE1', 'PRE2', 'UI2', 'UI3', 'VI2', 'VI3', 'WI2',
                    …
        DRX             =SIMP (statut=' f', typ=' R'),
        DRZ             =SIMP (statut=' f', typ=' R'),
        GRX             =SIMP (statut=' f', typ=' R'),
        …


        FACE_IMPO       =FACT (statut=' f', max=' ** ',
            …
            regles= (UN_PARMI ('GROUP_MA', 'MESH',),
```

Code_Aster

Version default

Titre : Introduire un nouveau degré de liberté et les cond[...]
Responsable : PELLET Jacques

Date : 24/06/2016 Page : 4/4
Clé : D5.03.03   Révision :
cc6169847ed0

```
                  AU_MOINS_UN ('DX', 'DY', 'DZ', 'DRX', 'DRY MARTINI', 'DRZ', 'GRX',
'NEAR', 'PHI',
                        'TEMP', 'PRE1', 'PRE2', 'DNOR', 'DTAN'),
        …
        DRX           =SIMP (statut=' f', typ=' R'),
        DRY MARTINI       =SIMP (statut=' f', typ=' R'),
        DRZ           =SIMP (statut=' f', typ=' R'),
        DNOR          =SIMP (statut=' f', typ=' R'),
        DTAN          =SIMP (statut=' f', typ=' R'),
        GRX           =SIMP (statut=' f', typ=' R'),
    …
```