

Structures of data cabl_precont

Summary:

Description of the structure of data `cabl_precont`.

This Structure of Data is created by the operator `DEFI_CABLE_BP` and used in the operator `AFFE_CHAR_MECA`.

1 Presentation

The structure of data `sd_cabl_precont` is produced by the operator `DEFI_CABLE_BP` [U4.42.04]. This operator calculates the initial profiles of tension along the cables of prestressed of a structure concrete, knowing the tension applied at the ends and other parameters characteristic of anchorings and materials. Each cable is defined by an occurrence of the keyword factor `DEFI_CABLE`. It also calculates the relations kinematics between the concrete and the cables.

The structure of data `sd_cabl_precont` is then used by the operator `AFFE_CHAR_MECA` [U4.44.01], in order to define a mechanical loading of type `RELA_CINE_BP`, with an aim of calculating the state of balance of the unit structure concrete/cables of prestressing. The resolution is carried out by the operator `STAT_NON_LINE` [U4.51.03], option `BEHAVIOR`.

The structure of data `sd_cabl_precont` gather two counts, an elementary map (map of the initial constraints) and a list of relations (relations kinematics between the degrees of freedom of the nodes of the cables and the degrees of freedom of their nodes "close" to the structure concrete).

2 Structure of data

2.1 Tree structure

```
cabl_precont (K8):: = record

    (O)   \.CHME.SIGIN'      :   SD carte_SIEF_R
    (O)   \CABLE_BP'        :   SD counts
    (O)   \CABLE_GL'        :   SD counts
    (O)   \.LIRELA'         :   SD liste_rela
```

The table `CABLE_BP` associated with SD `cabl_precont` contains the 11 following parameters:

<code>\NUMC_CABLE'</code>	I
<code>\NOEUD_CABLE'</code>	K8
<code>\ABSC_CURV'</code>	R
<code>\ALPHA'</code>	R
<code>\TENSION'</code>	R
<code>\MAILLE_BETON_VOISINE'</code>	K8
<code>\NOEUD_BETON_VOISIN'</code>	K8
<code>\INDICE_IMMERSION'</code>	I
<code>\INDICE_PROJECTION'</code>	I
<code>\ECCENTRICITY'</code>	R
<code>\NUM_CABLE'</code>	K8
<code>\NOEUD_MILIEU'</code>	YES or not

The table `CABLE_GL` associated with SD `cabl_precont` contains the 9 following parameters:

<code>\TYPE_ANCRAGE1'</code>	K8
<code>\TYPE_NOEUD1'</code>	K8
<code>\NOM_ANCRAGE1'</code>	K16
<code>\TYPE_ANCRAGE2'</code>	K8
<code>\TYPE_NOEUD2'</code>	K8
<code>\NOM_ANCRAGE2'</code>	K16
<code>\TENSION'</code>	R
<code>\RECU_ANCRAGE'</code>	R
<code>\ADHERENT'</code>	K8

The SD table is described in [D4.02.05].

Object `\.CHME.SIGIN'`

The map (constant field by mesh) associated with the structure of data `cabl_precont` has as a denomination

```
CABL_PR (K8)/\.CHME.SIGIN'
```

and the size represents `SIEF_R`.

The structure of data map is described in [D4.06.05].

Object `\.LIRELA'`

The list of relations (structure of data `liste_rela`) with the structure of data `cabl_precont` has as a denomination

```
CABL_PR (K8)/\.LIRELA'
```

The structure of data `liste_rela` is described in [D4.06.13].