Operator PROJ_VECT_BASE

1 Goal

To project a vector assembled on a base of mechanical clean modes or a basis of RITZ. The vector project could be used by the calculation algorithms in components generalized (DYNA_TRAN_MODAL for example [U4.53.21]).

One can use PROJ_BASE [U4.63.11] for these projections.

Product a concept of the type vect_asse_gene.
2 Syntax

\[
\text{vecgene } [\text{vectasse_gene}] = \text{PROJ\_VECT\_BASE} \\
\quad ( \\
\quad \quad \bullet \text{ BASE } = \text{Ba,} \quad / [\text{mode\_meca}] \\
\quad \quad \quad / [\text{mode\_gene}] \\
\quad \quad \bullet \text{ NUME\_DDL\_GENE } = \text{nu\_gene,} \quad \quad \quad [\text{nume\_ddl\_gene}] \\
\quad \quad \bullet / \text{ VECT\_ASSE } = \text{goes,} \\
\quad \quad \quad [\text{cham\_no\_DEPL\_R}] \\
\quad \quad \quad / \text{ VECT\_ASSE\_GENE } = \text{goes,} \\
\quad \quad \quad [\text{vectasse_gene}] \\
\quad \bullet \text{ TYPE\_VECT } = \quad / \text{ FORC',} \quad \quad [\text{DEFECT}] \\
\quad \quad \quad / \text{DEPL'}, \\
\quad \quad \quad / \text{QUICKLY'}, \\
\quad \quad \quad / \text{ACCE'} \\
\quad )
\]
3 Operands

3.1 Operand BASE

\[ BASE = Ba \]

Concept of the type \textit{mode_meca} or \textit{mode_gene} for under-structuring which contains the vectors defining the subspace of projection.

3.2 Operand NUME_DDL_GENE

\[ NUME_DDL_GENE = nu\_gene \]

Classification associated with the generalized model.

3.3 Operands VECT_ASSE/VECT_ASSE_GENE

\[ / \quad VECT\_ASSE = \text{goes} \]

Concept of the type \textit{cham_no\_DEPL\_R}, assembled vector which one wishes to project.

\[ / \quad VECT\_ASSE\_GENE = \text{goes} \]

Concept of the type \textit{vect\_asse\_gene}, assembled vector resulting from the under-structuring, which one wishes to project.

3.4 Operand TYPE_VECT

\[ TYPE\_VECT = \text{typ} \]

Character string describing the type of the field represented by the assembled vector, by default one expects a field of the type forces \textit{FORC} the other possibilities are \textit{DEPL}, \textit{QUICKLY}, and \textit{ACCE}. The treatment is different according to whether the option is used \textit{FORC} or others.

- With the option \textit{FORC}, simple projection is carried out \[ \Phi^T f, \] where \[ \Phi \] is the base of modes and \[ f \] effort.
- With the other options, one calculates by problem reverses the modal coefficients of participation associated with a given displacement. It is supposed that one can write displacement \[ x \] in the form \[ x = \eta^T \Phi. \] One calculates then \[ \eta = \Phi^T (\Phi^T \Phi)^{-1} x \] (use of pseudo-opposite of Moore-Penrose).