

## Operator PROJ\_VECT\_BASE

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### 1 Goal

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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

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```
vecgene [vect_asse_gene] = PROJ_VECT_BASE

( ♦ BASE = Ba, / [mode_meca]
/ [mode_gene]

♦ NUME_DDL_GENE = nu_gene, [nume_ddl_gene]

♦ / VECT_ASSE = goes,
[cham_no_DEPL_R]

/ VECT_ASSE_GENE = goes,
[vect_asse_gene]

♦ TYPE_VECT = / 'FORC', [DEFECT]
/ 'DEPL',
/ 'QUICKLY',
/ 'ACCE'

)
```

## 3 Operands

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### 3.1 Operand BASE

- ◆ BASE = Ba

Concept of the type `mode_meca` or `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

- ◆ / VECT\_ASSE = goes

Concept of the type `cham_no_DEPL_R`, assembled vector which one wishes to project.

- / VECT\_ASSE\_GENE = goes

Concept of the type `vect_asse_gene`, assembled vector resulting from the under-structuring, which one wishes to project.

### 3.4 Operand TYPE\_VECT

- ◇ TYPE\_VECT = typ

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

- With the option `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-inverse of Moore-Penrose).