

Data format sd_melasflu

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1 General information

the data structure sd_melasflu store the data relative to a computation of fluid interaction - structure.

2 Tree structure of Data format

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the sd_melasflu (K8):
  ◆ ''          : sd_melasflu19
  ◇ ".VEN"      : OJB S V R
  ◇ ".VCN"      : OJB S V R
  ◆ ''          : sd_table
  ◇ ''          : sd_l_table

sd_melasflu19 (K19):
  ◆ ".REMF"     : OJB S V K8 long=2
  ◆ ".DESC"     : OJB S V K16 long=1
  ◆ ".FACT"     : OJB S V R
  ◆ ".FREQ"     : OJB S V R
  ◆ ".MASG"     : OJB S V R
  ◆ ".NUMO"     : OJB S V I
  ◆ ".VITE"     : OJB S V R
```

3 Contained JEVEUX objects

the design and the presence of the objects depends on:

nbmode	number of modes of the base modal (length of . NUMO)
nbvite	many points of discretization of the interval velocity fluid (length of . QUICKLY)
typeflu	standard of flow pattern (FAISCEAU_TRANS , FAISCEAU_AXIAL ,...)
coupling	taken into account of fluid-structure coupling (YES / NON)

3.1 Object .REMF

".REMF" : S V K8 long=2

V (1)	name of the concept of the sd_type_flui_stru type used for computation
V (2)	name of modal base (standard sd_mode_meca) used for computation

3.2 Object .NUMO

".NUMO" : S V I long=nbmode

V (imode)	imodeème sequence number of the modal base which takes part in computation
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3.3 Object .VITE

``.VITE`` : S V I long=nbvite

V (*)	discretization fluid velocity
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3.4 Object .DESC

``.DESC`` : S V K16 long=1

V (1)	“DEPL”
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Note :

| this object is useless.

3.5 Object .FACT

``.FACT`` : S V R

If FAISCEAU_TRANS: ⇒ long=3*nbvite*nbmode	
V (imode, ipoint, 1)	Pseudonym participation factor in direction OX for the ipoint ^{ème} velocity and the imode ^{ème} mode
V (imode, ipoint, 2)	Pseudonym participation factor in direction OY for the ipoint ^{ème} velocity and the imode ^{ème} mode
V (imode, ipoint, 3)	Pseudonym participation factor in direction OZ for the ipoint ^{ème} velocity and the imode ^{ème} mode

If not: ⇒ long=3*nbmode	
V (imode, 1)	Pseudonym participation factor in direction OX for the imode ^{ème} mode
V (imode, 2)	Pseudonym participation factor in direction OY for the imode ^{ème} mode
V (imode, 3)	Pseudonym participation factor in direction OZ for the imode ^{ème} mode

3.6 Object .FREQ

``.FREQ`` : S V R long=2*nbmode*nbpoint

V (imode, ipoint, 1)	frequency of the imode ^{ème} mode disturbed by flow for the ipoint ^{ème} velocity of the fluid
V (imode, ipoint, 2)	damping of the imode ^{ème} mode disturbed by flow for the ipoint ^{ème} velocity of the fluid

Note:

| The damping becomes negative at the speed of instability fluid-elastic.

Warning : The translation process used on this website is a "Machine Translation". It may be imprecise and inaccurate in whole or in part and is provided as a convenience.

3.7 Object .MASG

".MASG" : S V R

If FAISCEAU_TRANS * ⇒ long=nbvite*nbmode	
V (imode, ipoint)	generalized mass of the imode ^{ème} mode for the ipoint ^{ème} velocity of the fluid

If not: ⇒ long=nbmode	
V (imode)	generalized mass of the imode ^{ème} mode

3.8 Objects .VCN and .VEN

".VCN" : S V R long=nbmode*nbconnors
".VEN" : S V R long=nbmode

nbconnors corresponds to the number of points of discretization of the value of the constant of Connors cumulated for all the zones.

Objects .VCN and .VENN exist only if:

FAISCEAU_TRANS + coupling = YES + BASE_MODALE/AMOR_REDUI_CONN

V (imode, iconnors)	value the critical engine failure speed calculated for the imode ^{ème} modeet for the iconnors ^{ème} value of the constant of Connors.
V (imode)	value effective velocity of the imode ^{ème} mode

3.9 Data structure sd_table

Concept of the type sd_table container only one parameter NOM_CHAM . It contains the name of all the sd_cham_no of the modal displacements disturbed by flow.

3.10 Data structure sd_l_table

This data structure exists only in the case of a configuration FAISCEAU_AXIAL .

This sd_l_table contains only one sd_table under name MATR_GENE .

This sd_table has the following parameters:

- NUME_VITE lists integers describing the list of the numbers velocity of the fluid,
- VITE_FLUI describing the value velocity of the fluid,
- MATR_MASS for the various generalized matrixes of mass (one by velocity of fluid),
- MATR_AMOR for the various generalized matrixes of damping (one by velocity of fluid)
- MATR_RIGI for the various generalized matrixes of stiffness (one by velocity of fluid)

One stores also a NUME_DDL_GENE commun run with all these matrixes. This NUME_DDL_GENE has the form (K8) .NUXXX where the XXX are determined by GNOMSD . The name of the concept is thus based on the name user of the concept sd_melasflu but is also stored in the concept of the generalized matrixes.

The same remark also applies for the `cham_no` stored in the array. They have a joint `PROF_CHNO`.