

Data format sd_type_flui_stru

Summarized:

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1 General information

the data structure sd_type_flui_stru store the data relative to a kind of interaction fluid-structure.

2 Tree structure of Data format

- the SD_TYPE_FLUI_STRU (K8)
 - ◆ "(11) .FSIC" : OJB S V I
 - ◇ "(11) .FSVI" : OJB S V I
 - ◇ "(11) .FSVK" : OJB S V K8
 - ◇ "(11) .FSVR" : OJB S V R
 - ◇ "(11) .FSGM" : OJB S V K24
 - ◇ "(11) .FSGR" : OJB S V R
 - ◇ "(11) .FSCR" : OJB S V R

 - ◇ ".UNIT_FAISCEAU" : OJB S V I
 - ◇ ".UNIT_GRAPPES" : OJB S V I

3 Contained JEVEUX objects

3.1 Object .FSIC

- "(11) .FSIC" : S V I LONG=2

V (1)	standard of configuration of structure under flow: = 1 if the configuration is FAISCEAU_TRANS = 2 if the configuration is GRAPPE = 3 if the configuration is FAISCEAU_AXIAL = 4 if the configuration is COQUE_COAX
V (2)	= 1 if one takes into account fluid-structure coupling and 0 if not

3.2 Object .FSVI

- "(11) .FSVI" : S V I variable LONG= (see below)

For a configuration " FAISCEAU_TRANS "

V (2)	number of zone (nbzone)
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S" there is fluid-structure coupling

LONG=2+2*nbzone	
V (1)	1 if the step is of square type line (CARRE_LIGN) 2 if the step is of triangular type line (TRIA_LIGN)
V (3 with 2+nbzone)	Indicating defining the experimental configuration for which the coefficients of the couplings were obtained
V (3+nbzone with 2+2*nbzone)	number of point of discretization per zone for the method of Connors

If there is not fluid-structure coupling LONG=2

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.

V (1)	is not worth anything
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For a configuration " GRAPPE "

The object does not exist

For a configuration " FAISCEAU_AXIAL "

V (1)	1 if the study is carried out on <u>a beam simplified</u> 0 if the study is carried out on <u>a complete beam</u>
V (5)	different number of the type of grid (nbtype)

If the study is made on a complete beam

If one uses grids (nbtype>0)

V	
LONG=6+nbtype (2)	1 if the beam is directed according to axis OX 2 if the beam is directed according to axis OY 3 if the beam is directed according to axis OZ
V (3)	1 if the enclosure is circular 2 if the enclosure is rectangular
V (4)	number of mesh group corresponding to the beam
V (6)	nombbre total of grid (nbgrille)
V (7 with 6+nbtype)	standard of grid

Note:

I nowhere do not find information on the type of grid. I cannot thus make the correspondence between this integer and the physical representation of the grid

If one V does not use a grid (nbtype=0

)	
LONG=5 (2)	1 if the beam is directed according to axis OX 2 if the beam is directed according to axis OY 3 if the beam is directed according to axis OZ
V (3)	1 if the enclosure is circular 2 if the enclosure is rectangular
V (4)	number of mesh group corresponding to the beam

If the study is made on a beam simplified

V (4)	number of zone (nbzone)
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If one uses grids (nbtype>0)

LONG=7+nbtype+nbzone	
V (2)	1 if the beam is directed according to axis OX 2 if the beam is directed according to axis OY 3 if the beam is directed according to axis OZ
V (3)	1 if the enclosure is circular 2 if the enclosure is rectangular
V (6)	number of total tube (nbtube)
V (7 with 6+nbzone)	number of tube per zone
V (7+nbzone)	number of grid
V (8+nbzone with 7+nbtype+nbzone)	standard of grid

If one V does not use a grid (nbtype=0

)	
LONG=6+nbzone (2)	1 if the beam is directed according to axis OX 2 if the beam is directed according to the axis OY 3 if the beam is directed according to axis OZ
V (3)	1 if the enclosure is circular 2 if the enclosure is rectangular
V (6)	number of total tube (nbtube)
V (7 with 6+nbzone)	number of tube per zone

For a configuration COQUE_COAX

LONG=2	
V (1)	1 if one takes into account fluid-structure coupling and 0 if not
V (2)	1 if the beam is directed according to axis OX 2 if the beam is directed according to axis OY 3 if the beam is directed according to axis OZ

Notices general on object FSVI :

Several information is redundant (in particular the number of zones or the taking into account of fluid-structure coupling). Moreover same information is not available to the same places according to the configuration what makes very complicated the catch in hand of this operator

3.3 Object .FSVK

"(11) .FSVK" : S V K8 LONG=variable (see below)

For a configuration FAISCEAU_TRANS

LONG=4+nbzone	
V (1)	name of the concept <code>cara_elem</code> defining the beam
V (2)	"DX", "DY" or "DZ" to indicate the direction according to which applies the forces fluid-elastics
V (3)	concept of type function defining the density of the fluid V
interns (4)	concept of type function defining the density of the external fluid
V (5 with 4+nbzone)	concept of type function defining the profile velocity of the fluid for each zone

For a configuration GRAPPE

the object exists only if the coupling is active

LONG=4	
V (1)	standard of flow corresponding to the experimental configurations
V (2)	names of the node where applies the forces fluid-elastics
V (3)	name of the concept <code>sd_cara_elem</code> defining the beam
V (4)	name of the concept <code>sd_modele</code> defining the beam

For a configuration FAISCEAU_AXIAL

If the study is made on U N complete beam

LONG=3	
V (1)	concept of type function defining the density of the fluid
V (2)	concept of type function defining the kinematical viscosity of the fluid
V (3)	name of the concept <code>cara_elem</code> defining the beam

If the study is made on a beam simplified

LONG=2	
V (1)	concept of type function defining the density of the fluid
V (2)	concept of type function defining the kinematical viscosity of the fluid

For a configuration COQUE_COAX

LONG=3	
V (1)	name of the concept <code>sd_cara_elem</code> defining the beam
V (2)	name of the concept <code>sd_mater</code> defining the material V

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interns (3)	name of the concept sd_mater defining the external material
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3.4 Object .FSVR

- "(11) .FSVR" : S V R LONG=variable (see below)

For a configuration FAISCEAU_TRANS

If there is coupling

LONG=3+2*nbzone	
V (1)	coefficient of mass added
V (2)	not reduced
V (3)	density of the tube
V (4 to 3+2*nbzone)	limit of the interval of the constant of Connors for the method of the same name

If there is not coupling

LONG=1	
V (1)	coefficient of mass added

For a configuration GRAPPE

the object does not exist that if there is coupling

LONG=2	
V (1)	coefficient of mass added
V (2)	density of the fluid

For a configuration FAISCEAU_TRANS

If the study is made on a complete beam

If the enclosure is circular	
LONG=8	
V (1 to 4)	value of the vector gravity (intensity and directions)
V (5)	roughness of the tube
V (6 to 8)	characteristic of the circular wall, with in the order coordinates of the center and the radius

If the enclosure is rectangular	
LONG=10	
V (1 to 4)	value of the vector gravity (intensity and directions)
V (5)	roughness of the tube

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v (6 to 10)	characteristic of the rectangular wall, with in the order the coordinates of the center then dimensions of the enclosure according to axis OY and OZ
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If the study is made on a F simplified adze

If the enclosure is circular	
LONG=8+nbzone	
V (1 to 4)	value of the vector gravity (intensity and directions)
V (5)	roughness of the tube
V (6 to 8)	characteristic of the circular wall, with in the order coordinates of the center and the radius
V (9 with 8+nbzone)	radius of the tubes for each zone

If the enclosure is rectangular	
LONG=10+nbzone	
V (1 to 4)	value of the vector gravity (intensity and directions)
V (5)	roughness of the tube
V (6 to 10)	characteristic of the rectangular wall, with in the order the coordinates of the center then dimensions of the enclosure according to axis OY and OZ
V (11 with 10+nbzone)	radius of the tubes for each zone

For a configuration COQUE_COAX

LONG=7	
V (1)	density of the fluid
V (2)	viscosity kinematical of the fluid
V (3)	absolute roughness of the walls of the shells
V (4)	left steady average the loss ratios of entrance head
V (5)	left steady dynamics the ratios losses entrance head
V (6)	left steady average the loss ratios load in output
V (7)	left steady dynamics the loss ratios load in output

3.5 Object .FSGM

For a configuration FAISCEAU_TRANS

the object does not exist

For a configuration GRAPPE

the object does not exist

For a configuration FAISCEAU_AXIAL

If the study is made on a complete beam

If one uses key word TRI_GROUP_MA	
LONG=1	
V (1)	generic name of the group of meshes
If one uses key word GROUP_MA	
LONG=nbma	
V (1 with nbma)	name of the mesh groups composing the beam

If the study is made on a beam simplified

LONG=nbzone	
V (1 with nbzone)	name of the group of mesh of each zone

For a configuration COQUE_COAX

LONG=2	
V (1)	name of the group of mesh constituting the inner shell
V (2)	name of the group of mesh constituting the outer shell

3.6 Object .FSGR

"(11) .FSGR" : S V R LONG=nbgrille+6*nbtpe

This object exists only in one configuration FAISCEAU_AXIAL with taking into account of grid

V (1 with nbgrille)	list of the coordinates of the point medium of each grid
V (1+nbgrille with nbgrille+nbtpe)	length of the grid for each type of grid
V (1+nbgrille+nbtpe with nbgrille+2*nbtpe)	width of the grid for each type of grid
V (1+nbgrille+2*nbtpe with nbgrille+3*nbtpe)	thickness of the grid for each type of grid
V (1+nbgrille+3*nbtpe with nbgrille+4*nbtpe)	drag coefficient of the grid for each type of grid
V (1+nbgrille+4*nbtpe with nbgrille+5*nbtpe)	coefficient of bearing pressure of the grid for each type of grid
V (1+nbgrille+5*nbtpe with nbgrille+6*nbtpe)	roughness of the grid for each type of grid

3.7 Object .FSCR

"(11) .FSCR" : S V R LONG=2*nbtube

This object exists only in one configuration FAISCEAU_AXIAL with representation simplified

V (1 2*nbtube)	with	list of the coordinates of the centers of the tubes (X-coordinate followed by Y-coordinate for each tube)
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3.8 Object .UNITE.FAISCEAU

"UNITE.FAISCEAU" : S V I LONG=2

This object exists only in one configuration FAISCEAU_TRANS

V (1)	logical number of unit of the file providing of the useful values (by default 70)
V (2)	logical number of unit of the file providing of other useful values (by default 71)

3.9 Object .UNITE.GRAPPE

"UNITE.GRAPPE" : S V I LONG=2

This object exists only in one configuration GRAPPE

V (1)	logical number of unit of the file providing of the useful values (by default 70)
V (2)	logical number of unit of the providing file of other useful values (by default 71)