Structure of data sd_type_flui_stru

Summary:

Contents

1 General information

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

2 Tree structure of the Structure of Data

- SD_TYPE_FLUI_STRU (K8)

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♦   '(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
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◊   '.UNIT_FAISCEAU       :      OJB S        V        I
◊   '.UNIT_GRAPPES'       :      OJB S        V        I
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3 Contents of objects JEVEUX

3.1 Object .FSIC

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

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

3.2 Object .FSVI

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

For a configuration " FAISCEAU_TRANS "

V (2)	number of zone (nbzone)

If there is coupling fluid-structure

LONG=2+2*nbzone	
V (1)	1 if the step is of square type line (CARRE_LIGN) 2 if step is of the triangular type line (TRIA_LIGN)
V (3 with 2+nbzone)	Indicator 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 coupling fluid-structure

LONG=2	
V (1)	nothing is worth

For a configuration " BUNCH "

The object does not exist

For a configuration " FAISCEAU_AXIAL "

V (1)	1 if the study is carried out on one simplified beam 0 if the study is carried out on one complete beam
V (5)	different number of the type of grid (nbtype)

If the study is made on one complete beam

If grids are used (nbtype>0)

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

Note:

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

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

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

If the study is made on one simplified beam

V (4)	number of zone (nbzone)

If one uses grids (nbtype>0)

LONG=7+nbtype+nbzone	
V (2)	1 if the beam is directed according to the axis OX 2 if the beam is directed according to the axis OY 3 if the beam is directed according to the 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)	type of grid

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

LONG=6+nbzone	
V (2)	1 if the beam is directed according to the axis OX 2 if the beam is directed according to the axis OY 3 if the beam is directed according to the 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

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

Notice general on object FSVI :

Several information is redundant (in particular the number of zones or the taking into account of the coupling fluid-structure). 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 cara_elem defining the beam
V (2)	' DX ' , ' DY ' or ' DZ ' to indicate the direction according to which applies the forces fluid-rubber bands
V (3)	concept of type function defining the density of the internal fluid
V (4)	concept of type function defining the density of the external fluid
V (5 with 4+nbzone)	concept of type function defining the profile speed of the fluid for each zone

For a configuration BUNCH

The object exists only if the coupling is active

LONG=4	
V (1)	type of flow corresponding to the experimental configurations
V (2)	names of the node where applies the forces fluid-rubber bands
V (3)	name of the concept sd_cara_elem defining the beam
V (4)	name of the concept sd_modele defining the beam

For a configuration FAISCEAU_AXIAL

If the study is made on U N complete beam

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LONG=3	
V (1)	concept of type function defining the density of the fluid
V (2)	concept of type function defining the kinematic viscosity of the fluid
V (3)	name of the concept cara_elem defining the beam

If the study is made on one simplified beam

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

For a configuration COQUE_COAX

LONG=3	
V (1)	name of the concept sd_cara_elem defining the beam

V (2)	name of the concept sd_mater defining internal material
V (3)	name of the concept sd_mater defining external material

3.4 Object .FSVR

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

For a configuration FAISCEAU_TRANS

If there is coupling

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LONG=3+2*nbzone	
V (1)	coefficient of mass added
V (2)	not reduced
V (3)	density of the tube
V (4 with 3+2*nbzone)	limit 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 BUNCH

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 one <u>complete beam</u>

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)	characteristics of the circular wall, with in the order coordinates of the centre and

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
V (6 to 10)	characteristics of the rectangular wall, with in the order coordinates of the center then dimensions of the enclosure according to the axis OY and OZ

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)	characteristics of the circular wall, with in the order coordinates of the centre and
V (9 with 8+nbzone)	ray 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)	characteristics of the rectangular wall, with in the order coordinates of the center then dimensions of the enclosure according to axis OY and OZ
V (11 with 10+nbzone)	ray of the tubes for each zone

For a configuration COQUE_COAX

LONG=7	
V (1)	density of the fluid
V (2)	kinematic viscosity of the fluid
V (3)	absolute roughness of the walls of the hulls
V (4)	average stationary part of the loss ratios of load as starter
V (5)	dynamic stationary part of the loss ratios of load as starter
V (6)	average stationary part of the loss ratios of load at exit
V (7)	dynamic stationary part of the loss ratios of load at exit

3.5 Object .FSGM

For a configuration FAISCEAU_TRANS

The object does not exist

For a configuration BUNCH

The object does not exist

For a configuration FAISCEAU_AXIAL

If the study is made on one complete beam

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If the keyword is used TRI_GROUP_MA	
LONG=1	
V (1)	generic name of the whole of the meshs
If the keyword is used GROUP_MA	
LONG=nbma	
V (1 with nbma)	name of the groups of meshs composing the beam

If the study is made on one simplified beam

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 internal hull
V (2)	name of the group of mesh constituting the external hull

3.6 Object .FSGR

'(11) .FSGR' : S V R LONG=nbgrillle+6*nbtype

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+nbtype)	length of the grid for each type of grid
V (1+nbgrille+nbtype with nbgrille+2*nbtype)	width of the grid for each type of grid
V (1+nbgrille+2*nbtype with nbgrille+3*nbtype)	thickness of the grid for each type of grid
V (1+nbgrille+3*nbtype with nbgrille+4*nbtype)	coefficient of drag of the grid for each type of grid
V (1+nbgrille+4*nbtype with nbgrille+5*nbtype)	coefficient of bearing pressure of the grid for each type of grid
V (1+nbgrille+5*nbtype with nbgrille+6*nbtype)	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 simplified representation

V (1 with 2*nbtube)	list of the coordinates of the centers of the tubes (X-coordinate followed by ordinate for each tube)

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

3.9 Object .UNITE.GRAPPES

'UNITE.GRAPPES' : S V I LONG=2

This object exists only in one configuration BUNCH

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