

Modeling 3D_FLUI_ABSO

Summary:

This document describes for modeling 3D_FLUI_ABSO :

- degrees of freedom carried by the finite elements which support modeling,
- the related meshes supports,
- supported loadings,
- nonlinear possibilities,
- CAS-tests implementing modeling.

Modeling 3D_FLUI_ABSO (Phenomenon: MECHANICS) corresponds to finite elements whose meshes supports are surface. They make it possible to take into account the condition of absorbing border of fluid volumes.

1 Discretization

1.1 Degrees of freedom

Modeling	Degrees of freedom (with each node top)
3D_FLUI_ABSO	NEAR : pressure PHI : potential of displacement fluid

1.2 Mesh support of the matrices of rigidity

The meshes supports of the finite elements can be quadrangles or triangles. The elements are isoparametric.

Modeling	Mesh	Interpolation	Remarks
3D_FLUI_ABSO	TRIA3 TRIA6 QUAD4 QUAD8 QUAD9	linear quadratic linear quadratic	

1.3 Mesh support of the loadings

The same ones as previously.

2 Supported loadings

AFFE_CHAR_MECA	3D_FLUI_ABSO	Remarks
DDL_IMPO	FDLV111A	

3 Non-linear possibilities

3.1 Laws of behaviors

The only relation of behavior available for this modeling is RELATION 'ELAS' (under BEHAVIOR) in DYNA_NON_LINE (Cf [U4.51.11]).

3.2 Deformations

Only linearized deformations keyword 'SMALL' under DEFORMATION are available in the relations of behavior (cf [U4.51.11]).

4 Examples of implementation: CAS-tests

FDLV111A [V8.01.111]: Absorption of a wave of pressure in a fluid column