

## Modeling D\_PLAN\_ABSO

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### Summary:

This document describes for modeling D\_PLAN\_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 D\_PLAN\_ABSO (Phenomenon: MECHANICS) corresponds to finite elements whose meshes supports are linear. They make it possible to take into account the condition of absorbing border of sections of solids, studied in plane deformations.

## 1 Discretization

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### 1.1 Degrees of freedom

Modeling	Degrees of freedom (with each node top)
D_PLAN_ABSO	DX : following displacement $X$ DY : following displacement $Y$

### 1.2 Meshes supports of the matrices of rigidity

The meshes supports of the finite elements are segments. The elements are isoparametric.

Modeling	Mesh	Interpolation	Remarks
D_PLAN_ABSO	SEG2 SEG3	linear quadratic	

### 1.3 Meshes supports of the loadings

The same ones as previously.

## 2 Supported loadings

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The loading available is the following:

- `'ONDE_PLANE'`  
Allows to impose a seismic loading by plane wave.

## 3 Non-linear possibilities

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### 3.1 Laws of behaviors

The only relation of behavior, available under `DYNA_NON_LINE`, for this modeling, under `BEHAVIOR` is the relation `'ELAS'`.

### 3.2 Deformations

Only linearized deformations keyword `'SMALL'` under `DEFORMATION` are available.

## 4 Example of implementation: CAS-test

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- Non-linear dynamics  
SDLV120B [V2.04.120]: Analysis of the propagation of one compression wave in an infinite elastic bar (absorption of the wave at the border of the grid).