

## PLEXU07 – Transitory answer of a reinforced concrete flagstone: model GLRC\_DAMAGE

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### Summary:

This test is a copy of the test sdns106a by replacing solver DYNA\_NON\_LINE by CALC\_EUROPLEXUS. It aims at validating the taking into account of the keywords CABLES and LINER of law GLRC\_DAMAGE in CALC\_EUROPLEXUS.

## 1 Problem of reference

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See [V5.06.106]

## 2 Reference solution

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Idem

## 3 Modeling A

### 3.1 Characteristics of modeling

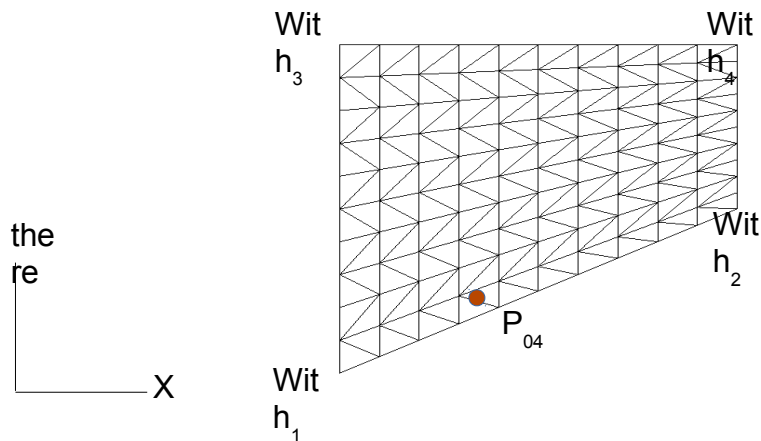


Figure 3.1-a : Grid of modeling A

Modeling: Q4GG

Boundary conditions:

- Embedding in  $A1$ ,
- Simple support  $A3A1$  and  $A2A4$ , that is to say  $DZ=0$  and  $DX=0$ .

Temporal integration:

- Diagram: EUROPLEXUS
- Pas de time:  $2 \cdot 10^{-6} s$ .

### 3.2 Characteristics of the grid

Many nodes: 121, Many meshes: elements TRI3 : 200, elements SEG2 : 40.

### 3.3 Sizes tested and results

One tests displacements, speed and acceleration of the point  $P04$  at various moments.

Identification	Type of reference	Value of reference	Tolerance
Following displacement $z$ with $t=2 \cdot 10^{-5} s$	'SOURCE_EXTERNE'	$-1,74913 \cdot 10^{-4} m$	0,15
Acceleration according to $z$ with $t=2 \cdot 10^{-5} s$	'SOURCE_EXTERNE'	$-7,99968 \cdot 10^5 m.s^{-2}$	$10^{-4}$
Following displacement $z$ with $t=1 \cdot 10^{-3} s$	'SOURCE_EXTERNE'	$-4,4933 \cdot 10^{-1} m$	0,03
Speed according to $z$ with $t=1 \cdot 10^{-3} s$	'SOURCE_EXTERNE'	$-8,24761 \cdot 10^2 m.s^{-1}$	0,1

## 4 Summary of the results

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One finds results very close to the results of references. This validates the taking into account of the keywords LINER and CABLE of GLRC\_DAMAGE in CALC\_EUROPLEXUS.