

PLEXU07 – Transitory answer of a reinforced concrete flagstone: model GLRC_DAMAGE

Summary:

This test is a copy of the test sdns106a by replacing solvor 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

See [V5.06.106]

2 Reference solution

Idem

3 Modeling A

3.1 Characteristics of modeling

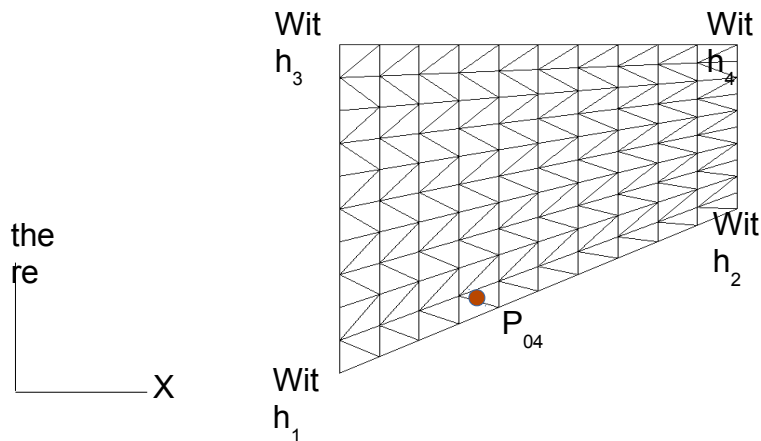


Figure 3.1-a : Grid of modeling A

Modeling: Q4GG

Boundary conditions:

- Embedding in AI ,
- 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

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.