

## ZZZZ356 - Validation of the order RAFF\_GP

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### Summary

This test of validation makes it possible to present a refinement of grid obtained starting from the order RAFF\_GP.

The starting point is a coarse grid of a notched structure. The arrival is a grid of the same notched structure, grid refined in the zone of calculation of the parameter of breaking process  $G_p$ .

This documentation is voluntarily brief.

## 1 Problem of reference

### 1.1 Geometry

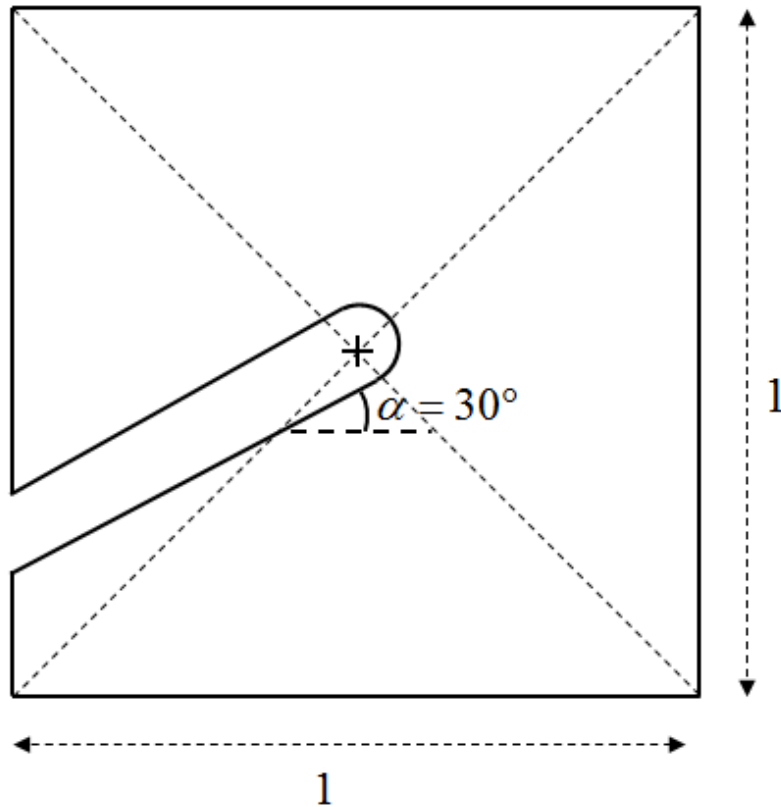


Figure 1.1 :

A two-dimensional plane structure is considered in which a notch is present. The structure is a square plate on side 1; it is notched by a tilted notch of ray 0.05 with  $30^\circ$  of the horizontal one.

## 2 Modeling A

### 2.1 Characteristics of the grid

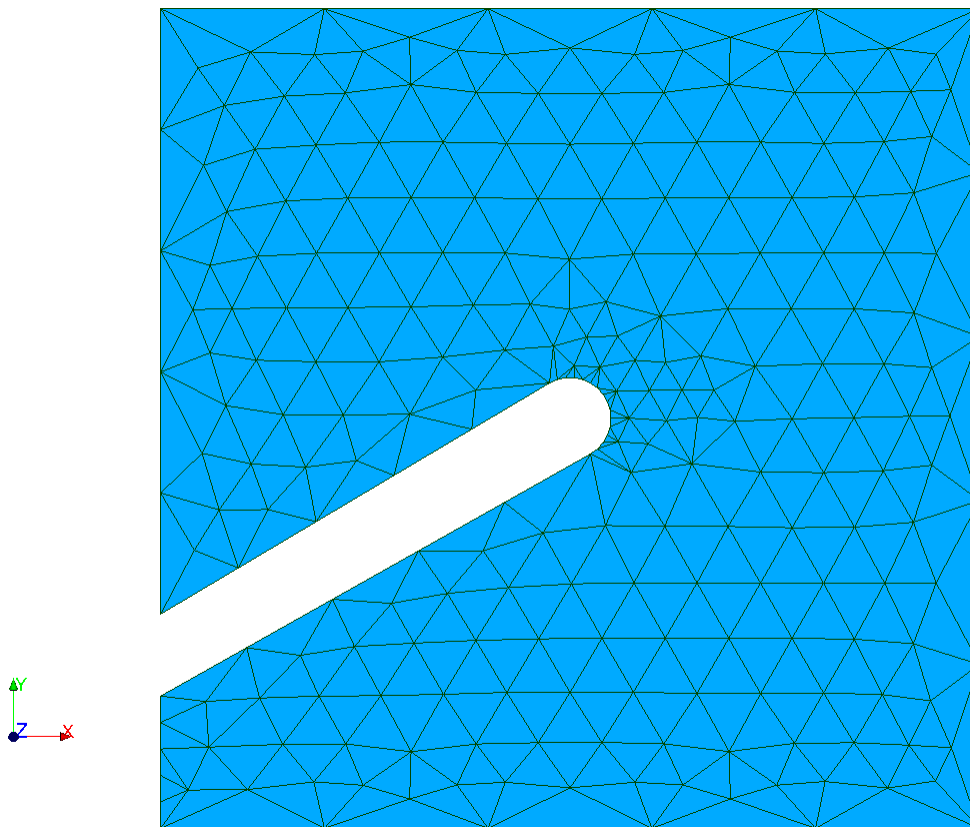


Figure 2.1 : Initial grid of modeling.

One starts from a coarse grid containing 250 nodes.

### 2.2 Operations carried out

The order `RAFF_GP` is used to refine the grid downstream from the notch. Four stages of refinement are carried out.

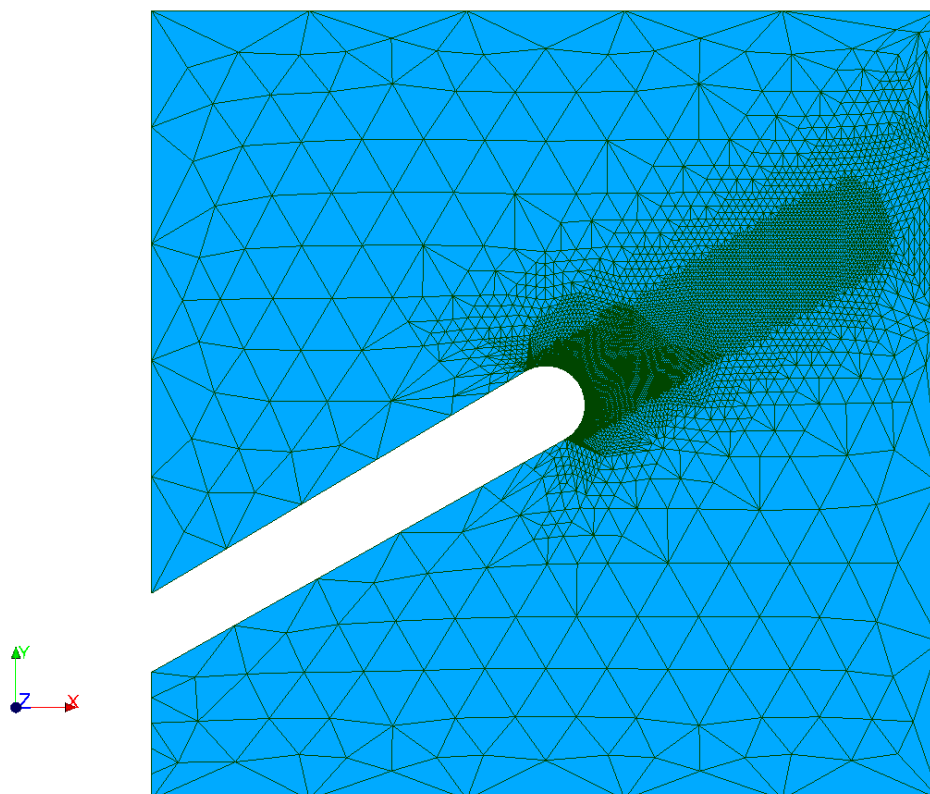


Figure 2.2 : Grid obtained after 4 refinements.

The final grid contains 8504 nodes.

## 2.3 Size tested and result

One tests the number of nodes of the final grid in three zones more or less close to the bottom of entialle. It is a test of not-regression.

The zones are the following ones:

zone 1: disc of ray 0.04 centered in (0.58; 0.55), very near to the bottom of notch

zone 2: disc of ray 0.04 centered in (0.77; 0.66), in the zone of chips

zone 3: disc of ray 0.04 centered in (0.22; 0.76), out of the zone of chips

The final grid contains 8504 nodes.

<b>Identification</b>	<b>Reference Aster</b>	<b>Tolerance</b>
Many nodes zone 1	1241	10
Many nodes zone 1	306	5
Many nodes zone 1	7	0