

DISTR01 – Parametric example of study

Summarized:

This test is an example of parametric study in support with the note [U2.08.07] – Distribution of parametric computations.

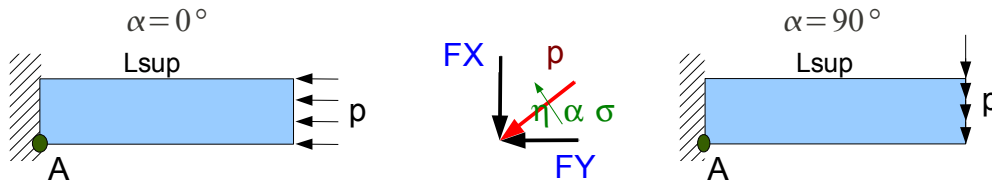
The boundary conditions, the values of the materials and the loadings do not have any physical meaning.

1 Problem of reference

1.1 Geometry

One considers a plate height 5 cm and length 1 m .

In the case of parametric study, one will vary the angle of the loading applied of 0° to 90° .



1.2 Properties of the material

the material is elastic isotropic whose properties are:

- $E = 210\,000\text{ MPa}$
- $\nu = 0.3$

1.3 Boundary conditions and loadings

One blocks the DX degrees of freedom and DY with the fixed support.

The pressure p applied at the end is worth 1 MPa .

1.4 Parametric study

the interest of this test is to be used as example for the distribution of parametric computations. One will refer to the note [U2.08.07] for more details and launching of this test as a parametric study.

During the launching of the benchmark, all the data files are not used.

Their utility here is specified:

- `distr01a.comm`: command file of the nominal study which will be declined for each set of parameters. `distr`
- `01a.com1`: additional command file testing the value of reference in the case. `distr` $\alpha = 0^\circ$
- `01a.med`: mesh of modelization A. `distr01a`
- `.50` and `distr01a.51`: example of definition of the sets of parameters. `distr01a`
- `.11`: example of postprocessing where the results of the various calculation cases are combined to produce a curve or a single array. The last three

files are not used during the launching of the standard benchmark. Reference solution

2 Method of calculating

2.1 the standard

execution of the test is made with, in pure $\alpha = 0^\circ$ compression. The solution is thus commonplace: the equivalent stress of Von Mises is equal to. Quantities p

2.2 and results of reference One tests

the value of the von Mises stress on average on line higher of the plate. The value is slightly parasitized by the stresses induced with the fixed support. Modelization

3 A Characteristic

3.1 of the modelization One uses

a modelization C_PLAN. Characteristics

3.2 of the mesh The mesh

contains 250 elements of the type QUAD4. Quantities

3.3 tested and results One tests

the mean value of the von Mises stress on line higher of the plate (). Standard Lsup

identification of	reference Value of reference	Tolerance	"ANALYTIQUE
Lsup	" 0.1% Summary	1 MPa	

4 of the results the test

is commonplace, the value obtained is simply parasitized by the stresses induced with the fixed support.