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Homework 3: Non-linear elastic block

1. Identify in the code (file, lines) the following items:

a) The definition of the example (loading, geometry)

Within the file preprocessing.m it is found the part relative to the block geometry construction as well as the different loading cases, concretely from line number 9 to line number 58.

b) The choice of the solution method (Newton's method with or without line-search).

In order to find the information relative to this point it is necessary to have a look to the code of the file main_buckling.m. In lines number 18 and 19 we can choose the solution method whereas in line 20 we can enable or disable the line-search option.

c) The implementation of the solution method.

Inside the file Equilibrate.m we can choose which method we are interested in carryin out, from lines 10 to 93 we find the code relative to the switch between the different methods.

d) The implementation of the incremental-iterative strategy, with smart initial guesses for imposed displacements.

The different lines where we do a loop on the load increments, concretely line 65 of file main_buckling.m and line 39 of file main_incremental_iterative.m

e) The introduction of random perturbation in the initial guesses of the solution method.

Within the file with name mail_buckling.m in line 76 and in the file main_incremental_iterative in line 50 we find the line corresponding to the introduction of perturbations in the problem.