

Subject

Robust topology optimization of nonlinear structures

Supervisors, contact, place of research

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Project Description

Topology optimization consists in determining such material distribution of the structure to optimize its mechanical or thermal features under a given set of constraints. Nowadays it is a popular tool used in the industrial applications to find new innovative designs.

The work will deal with the topology optimization of structures either under large deformation or possessing material or geometrically nonlinearity. The examples of such structures include among others: elasto-plastic contact between bodies, lightweight structures in transport or composite structures. The aim of the work will be to propose and to develop as well as to implement the effective numerical method based on the level set approach to solve this optimization problem under manufacturing constraints.

Bibliography

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