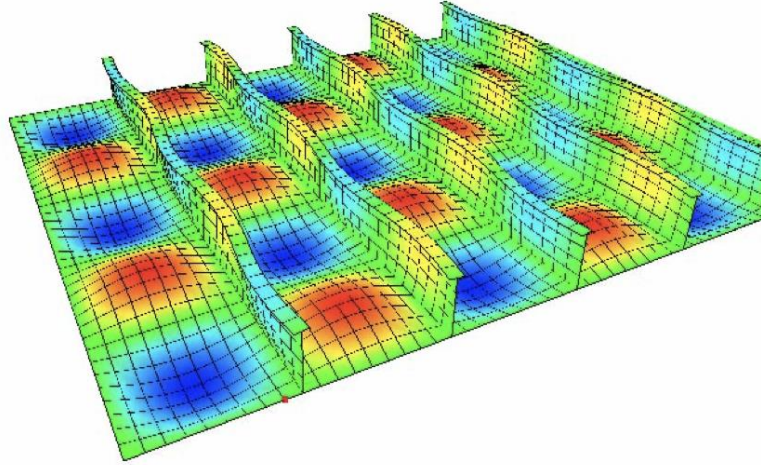


## Ultimate strength analysis of stiffened plate structures

### Background and motivation

Ultimate strength analysis of ship and offshore structures is one of the most fundamental and important limit state analyses. There are clear procedures in the rules of classification how it should be carried out. There are also commercial tools and codes that can be used as an aid and guidance.



### Objectives and goals of the project

In an ongoing research project on the division, a new holistic simulation model of a ship's energy efficiency, stability, crashworthiness and structural strength is under development. This thesis project will contribute to the project by developing a code (later to be a module in a larger model) that can be used to make rapid ultimate strength assessment of stiffened plate structures, and if time allows for it in the project also for arbitrary ship cross-sections.

### Methods and tools

The published theory and procedures for buckling and ultimate strength of stiffened plate structures will form the basis for a Matlab/Python code that will be developed in the thesis project.

The thesis should be written in Word using a template provided by the department.

### The MSc thesis project should incorporate (at least) the following tasks:

- Literature study.
- Coding in Matlab/Python of theory for buckling and ultimate strength analysis of flat stiffened plate structures.
- Coding in Matlab/Python of theory for buckling and ultimate strength analysis of curved stiffened plate structures.
- Write a thesis report and present it on a public seminar.

### Contact person (examiner and supervisor at Chalmers):

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### Co-supervisor:

Artjoms Kuznecovs