TUHH
Technische
Universität
Hamburg

Konstruktion
und Festigkeit
von Schiffen

TUHH · M-10 · Am Schwarzenberg Campus 4C · D-21073 Hamburg

PROJECT OR MASTER THESIS

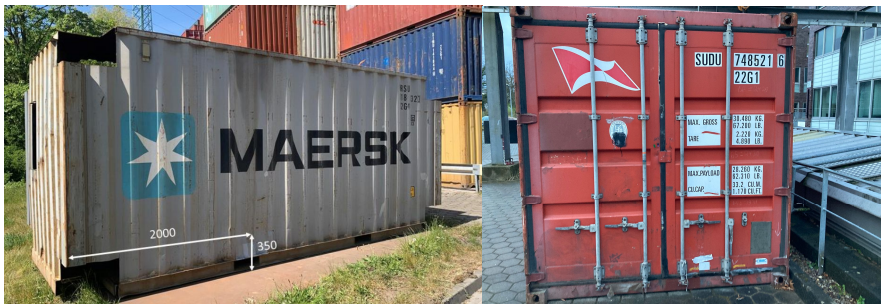
Modellierung eines Containers mit FE mit gemessenen Materialkennwerten für Simulationen von Tragfähigkeit und Schäden

Modelling of a container with FE with measured material data for the simulation of bearing capacity and damages

The loss of containers is a significant problem for the global merchant fleet as well as other marine operators that might accidentally hit floating containers.
Some container losses are associated with structural damages of the containers which lead to a collapse of a container stack.

In order to investigate the bearing capacity a numerical finite element model of a container is to be built in LS-Dyna. Material properties from specimen tests conducted in our laboratory are available and need to be incorporated. One major challenge is the modelling of the container doors which is one of the most important parts in this study.
The bearing capacity of a container door and its contribution to the global strength is different than of a wall, but the question is how. The objective is to model this in a simplified way and to evaluate the modelling approach.
Hence, this project is based on the following tasks:

1) Reading and analysis of the state of the art
2) FE Modelling of a container where experimental data can be incorporated
3) Assessment of the modelling of the doors (including a parameter study)
4) Validation of the container model with experiments and / or simulations from the literature.



Figures: 20” Containers that are need to be modeled

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