Technische Universität Braunschweig

Institut for Acoustics and Dynamics

# Numerical Modelling of a Building Acoustic Wall Test Facility in accordance with DIN EN ISO 10140

## Bachelor Thesis/ Student Research Project

A survey conducted by the Federal Environment Agency in 2024 revealed that 48% of respondents feel that noise has a negative impact on their health – a similar survey conducted in 2020 revealed that transport and neighbours are the main sources of noise pollution. This means that minimum sound insulation requirements must be met, particularly in building construction. Building acoustic wall test facilities, for example, are used to investigate the acoustic properties of wall structures. In addition to such real experiments, numerical experiments are also gaining in importance, as they can be implemented in a more resource-efficient manner.

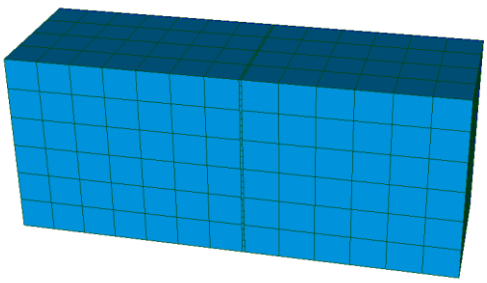
**Tasks:**

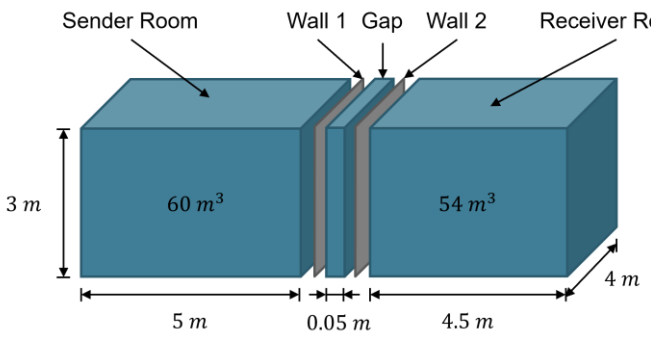
- Literature survey on numerical modelling of wall test facilities
- Development of a numerical wall test facility model in accordance with DIN EN ISO 10140

**Requirements:**

- Basic knowledge of the finite element method and vibroacoustics
- Basic knowledge of Python/Matlab

Source: https://www.hft-stuttgart.de/fileadmin/Dateien/Bauphysik/Einrichtungen/2017-07-04_Wandpruefstand_2017.pdf



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