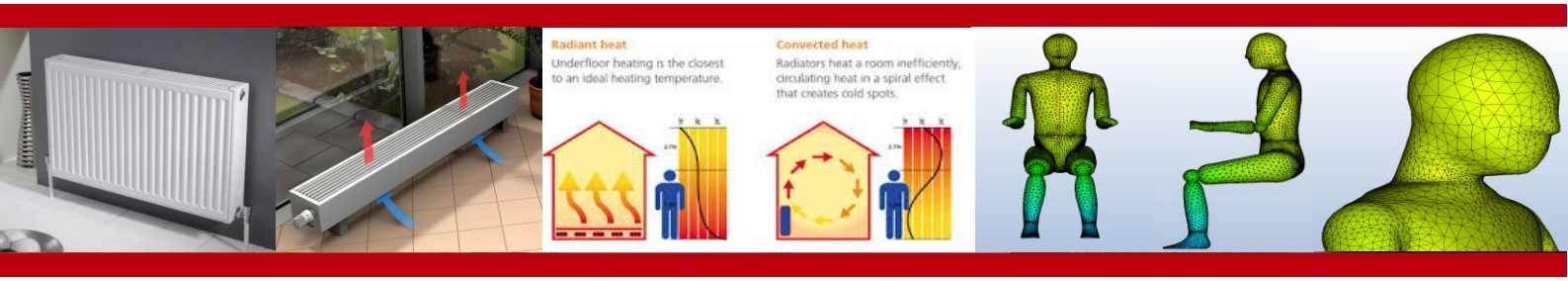
MASTER THESIS

CFD-Study: Evaluation of Heat Delivery Systems for Renovated Buildings based on Thermal Comfort Criteria



When renovating residential buildings, high living standards and human health must be ensured. For this, thermal comfort is a key issue. At KIT, the ***Building Science Group (fbta)*** in collaboration with the ***Department of Fluid Machinery (FSM)*** evaluates the performance of **radiators** and **convectors** based on heating capacities and thermal comfort using CFD-simulations and experimental techniques (LOBSTER).

This master thesis is part of the project "LowEx-Bestand". Together with Fraunhofer ISE and industry partners like Viessmann, Bosch, Stiebel Eltron and others, KIT develops energy efficient solutions to heat renovated multi-family houses with heat pump systems.

Tasks:

- Familiarization with technical parameters of radiators and convectors
- Extension of available CFD models
- Simulation of different types of radiator and convector heating systems in buildings
- Comparative evaluation of the thermal comfort

Requirements:

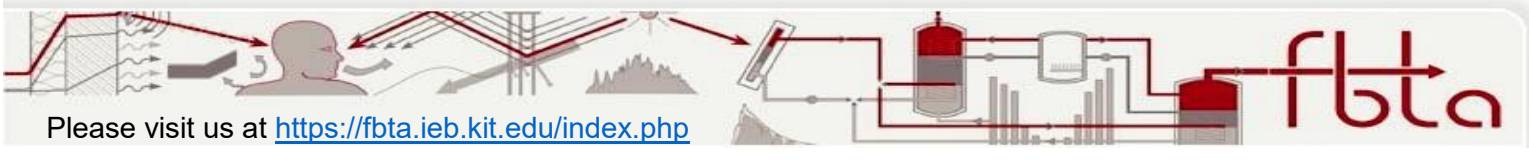
- Master student at KIT in mechanical engineering, energy engineering or similar
- Interest in learning CFD software
- Knowledge in the field of heating systems, ventilation, fluid mechanics is advantageous
- Microsoft office package

Your thesis will be supervised by Prof. Martin Gabi (FSM) and Prof. Andreas Wagner (Building Science Group - fbta). The thesis can be written in English or in German.

Please contact Dr. Reza Safi Zadeh at reza.safi@kit.edu or Dr. Stefan Hess at stefan.hess@kit.edu for further questions.

Please send your application with the following reference number to above emails
(Short CV and certificates in one pdf document with a maximum of 10 MB)

Reference number: **LX-2017-72**



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