University of Stuttgart
Germany

student
research
project

Low intrusive FE Square simulations using surrogate models on the microscale

Multi-level Finite Element simulations in the spirit of the FE^2 *(FE Square)* method can give accurate predictions for problems with underlying microstructure. However, this goes along with unacceptable computational burden. Replacing the microscale model by **surrogate models** can provide the sought-after efficiency. The implementation of a **generalized interface** in Python or C/C++ enabling straight-forward **parallelization** of the surrogates is topic of this research project.

Requirements

- interest in simulation technology (Finite Elements and beyond)
- interest in parallelization/high-performance computing
- programming knowledge (ideally Python or C/C++)

Contact

EMMA – Efficient Methods for Mechanical Analysis
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Python, C/C++

nonintrusive parallelization of surrogates

COMMAS, civil engineering, ...

SimTech

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