

Large scale simulation of additive manufacturing products

Setting:

Additive manufacturing (AM) is an innovative layer-wise method for the production of 3D objects. The process offers a high degree of design freedom allowing the producing of complex 3D structures.

This software lab seeks to extend a C++ finite element software (AdhoC++) to enable efficient computation of parts produced by AM.

Your Tasks:

- Implement an efficient CT-scan reader with ITK, MPI and HDF5
- Improve the numerical integration routines
- Benchmark industrial relevant FE analysis
- Test your implementation on different clusters

Project Characteristics

Modeling: ★★☆☆☆
Mathematics: ★★☆☆☆
Programming: ★★★★★
Science: ★★★★★

