

Automated Finite Element Assembling

Matthias Hochsteger¹ Joachim Schöberl²

In this talk we present implementation aspects of the general purpose Finite Element software NGSolve. In particular we address the steps to transform a variational formulation given by the user in a high-level representation into an algorithm to assemble element matrices. We also discuss the differences between run-time evaluation and just-in-time compilation where C++ code is generated at run-time for the given equation.

¹ TU Wien, Analysis and Scientific Computing, Wien, Austria,
matthias.hochsteger@tuwien.ac.at

² TU Wien,
joachim.schoeberl@tuwien.ac.at