1116-K1-902   **Michael Bader***, Department of Informatics, Technische Universität München, Boltzmannstr. 3, 85748 Garching, Germany. *Tsunami Simulation for Teaching CSE and HPC.*

The open source code SWE (https://github.com/TUM-I5/SWE/) implements a simple Finite Volume method to solve the shallow water equations. With small extensions, the code can be applied to simulate basic tsunami scenarios. It has been used in several undergraduate courses focusing on education in Computational Science and Engineering and Parallel Computing, as well as for graduate students in the context of summer schools.

In a Bachelor-level programming lab, students implement their own version of SWE from scratch, starting with Riemann problems and also dealing with software developement issues, such as testing and I/O. As project activities, students have implemented versions of SWE in diverse languages, such as Java, OpenCL or CUDA. In addition, the SWE code has been the basis for various undergraduate research projects dealing with diverse topics, such as the extension of shallow water models, uncertainty quantification or novel approaches in parallel programming. (Received September 15, 2015)