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Operational Tsunami Modelling with TsunAWI for the German-Indonesian Tsunami Early Warning System: Recent Developments

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Starting in 2005, the GITEWS project (German-Indonesian Tsunami Early Warning System) established from scratch a fully operational tsunami warning system at BMKG in Jakarta.
Numerical simulations of prototypic tsunami scenarios play a decisive role in a priori risk assessment for coastal regions and in the early warning process itself. Repositories with currently 3470 regional tsunami scenarios for GITEWS and 1780 Indian Ocean wide scenarios
in support of Indonesia as a Regional Tsunami Service Provider (RTSP) were computed with the non-linear shallow water modell TsunAWI.

It is based on a finite element discretisation, employs unstructured grids with high resolution along the coast and includes inundation. This contribution gives an overview on the model itself, the enhancement of the model physics, and the experiences gained during the process of establishing an operational code suited for thousands of model runs. Technical aspects like computation time, disk space needed for each scenario in the repository, or post processing techniques have a much larger impact than they had in the beginning when TsunAWI started as a research code. Of course, careful testing on artificial benchmarks and real events remains essential, but furthermore, quality control for the large number of scenarios becomes an important issue.