



Modelling of tsunami generation from underwater landslides in the Storegga area, propagation and tide-tsunami interactions in the North Sea.

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The last known mega-tsunami to hit rim countries of the North Sea took place over 8,000 years ago. But coastal areas of the North Sea are vulnerable to damaging tsunamis caused by localized underwater landslides.

Therefore, numerical simulations on the basis of a high-resolution multilayer model in curvilinear coordinates was performed to study generation and propagation of a tsunami wave in the Storegga area. Various scenarios of initial conditions for a landslide (Storegga, Storneset, Inner Scar) are considered. The estimation of accuracy of the model for various spatial resolutions was carried out.

The slide model is coupled with a very high-resolution finite element model (TsunAWI) for simulation of the tsunami in the North Sea. The propagation of the tsunami wave in the North Sea was investigated without and with tidal forcing. Influence of the tidal wave on the tsunami wave is considered in various phases of tide. By this analysis the affected areas in the North Sea can be determined.