

Lothar-Collatz-Seminar

Wed, 22. January · **16:30** · Sedanstr. 19, Room 203

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Non-Hydrostatic Model with Quadratic Pressure Profile for Solving Moving Bottom-Generated Waves

Abstract:

This research focuses on scenarios where non-hydrostatic effects are crucial, specifically on moving bottom-generated waves, such as landslide tsunamis. It builds upon a previously developed projection-based approach that extends shallow water equations (SWE) to account for the non-hydrostatic effect for static bottom developed by Jeschke et al. (*Int. J. Numer. Meth. Fluids*, 84: 569–583, 2017). In the mentioned study, a quadratic pressure relation was proposed instead of the linear, which shows equivalence to Boussinesq-type equations. We further develop this model to be suitable for moving bottom cases. Moreover, we manipulate it so that it can be solved with the projection method, avoiding the simplification in the previously mentioned publication. We showed that our proposed alternative form is necessary to accurately solve a more involved sloping bottom case.

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www.c3s.uni-hamburg.de/news-events/seminar-c3s.html

