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Numerical modelling of the 26th December 2004 Indian Ocean tsunami for the South-Eastern coast of India

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A numerical simulation of the 26th December 2004 Indian Ocean tsunami for the Tamil Nadu coastal zone is presented. The simulation approach is based on a fully nonlinear Boussinesq tsunami propagation model and included an accurate computational domain and a robust coseismic source. The simulation is first confronted to available tide gauge and runup observations. The agreement between observations and the predicted wave heights allowed a reasonable validation of the simulation. As a result a full picture of the tsunami impact is provided over the entire coastal zone Tamil Nadu. The processes responsible for coastal vulnerability are discussed.