Estimation of runup heights of the 2011 Tokohu tsunami based on 3D numerical simulations and 1D analytical runup theory

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A gigantic earthquake (M9.0) occurred at 14h46m (JST) 11th, March 2011 in the Pacific Ocean east off the Tohoku district north east part of the Honshu Island, Japan. It was accompanied by the huge tsunami. Measured runup heights of this tsunami are collected in several web sites and papers. In this study, we compare observed and computed runup heights. Numerical computations are performed in the framework of the 3D hydrodynamic equations matched with 1D theory of long wave runup near shoreline.