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Three-dimensional simulation of 1983 central East (Japan) Sea earthquake tsunami at the Imwon Port (Korea)

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The dynamics of water flow at the Imwon Port (Korea) during the 1983 tsunami event is studied numerically in the framework of the 2D nonlinear shallow-water equation and 3D Reynolds averaged Navier-Stokes equations. Tsunami occurred on May 26, 1983 in the East (Japan) Sea affects the Port of Imwon with the heights 5.1 m near the shoreline and 7.15 m in the creek, and this was the highest runup record on the east Korean coast. The three-dimensional model simulation adequately reproduces the observed characteristics of the run-up features including formation of the vortex structure inside of the port, thus providing useful information on terminal effects of tsunami propagated from far-field sources.