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Tsunami-HySEA model validation for tsunami current predictions

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Model ability to compute and predict tsunami flow velocities is of importance in risk assessment and hazard mitigation. Substantial damage can be produced by high velocity flows, particularly in harbors and bays, even when the wave height is small. Besides, an accurate simulation of tsunami flow velocities and accelerations is fundamental for advancing in the study of tsunami sediment transport. These considerations made the National Tsunami Hazard Mitigation Program (NTHMP) proposing a benchmark exercise focussed on modeling and simulating tsunami currents. Until recently, few direct measurements of tsunami velocities were available to compare and to validate model results. After Tohoku 2011 many current meters measurement were made, mainly in harbors and channels. In this work we present a part of the contribution made by the EDANYA group from the University of Malaga to the NTHMP workshop organized at Portland (USA), 9-10 of February 2015. We have selected three out of the five proposed benchmark problems. Two of them consist in real observed data from the Tohoku 2011 event, one at Hilo Habour (Hawaii) and the other at Tauranga Bay (New Zealand). The third one consists in laboratory experimental data for the inundation of Seaside City in Oregon.

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