Geophysical Research Abstracts
Vol. 16, EGU2014-7423, 2014
EGU General Assembly 2014

Numerical wave modelling in a coastal and coupled context

Fabrice Ardhuin (1), Aron Roland (2), and Andres Sepulveda (3)

(1) IFREMER, Laboratoire d'Océanographie Spatiale, Plouzané, France (ardhuin@ifremer.fr), (2) Technische Universitat Darmstadt, Hydraulics Engineering department, Germany (aaronroland@gmx.de) , (3) University of Concepcion, Chile (andres@dgeo.udec.cl)

The development of numerical wave models for coastal applications, including coupling with ocean circulation models, has spurred an on-going effort on
theoretical foundations, numerical techniques and physical parameterizations.
Some important aspects of this effort are reviewed here, and results are shown in the case of the French Atlantic and Channel coast using version 4.18 of the WAVEWATCH III model. Compared to previously available implementations, the model errors have been strongly reduced thanks to, among other things,
the introduction of currents, coastal reflection, and bottom sediment types. The model is particularly validated using SARAL-AltiKa data, which provides more accurate estimations of wave heights than previous Ku-band satellite altimeters. Including a wave model in a coupled modelling system puts more constraints on the required quality of the momentum fluxes passing through the wave field from the atmosphere to the ocean. Ongoing work to validate the wave impact on the wind stress will be reviewed, including the use of ECMWF's coupled atmosphere-wave IFS system.