Quo Vadis WAVEWATCH III

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Abstract

The WAVEWATCH III wind wave model has been available as a community wind wave model since the public release of model version 1.18 in 1999. The most recent public release is model version 3.14 (2009), with more than 800 registered users world wide. From its inception, WAVEWATCH III has been designed as an operational wave modeling framework, with the capability to include various numerical and physical approaches as alternate options. To simplify operational implementation, these options are selected before the model is compiled, so that the modeling framework has maximum flexibility, yet the operational implementation remains as simple and robust as possible (only including code for selected options). Up to version 3.14, WAVEWATCH III was mostly developed at NCEP, with some limited contributions from outside NCEP.

Development geared toward the next public release is in full swing. WAVEWATCH III is now becoming the envisioned international community wave modeling framework, where NCEP provides code management, but only a small part of new contributions to the code. Co-developers of WAVEWATCH III now include government entities (US Navy, US Army Corps of Engineers, UK Met Office, BIO, etc.) and many academic research groups, mostly though a recent NOPP project on improving wave model physics (DUT, URI, UNSW, Swinburn, TAMU, FSU, NPS, SF State, etc.).

The presentation will give an overview of present capabilities of WAVEWATCH III, as well as examples of many new capabilities that are intended to be included in the next public release. This will cover alternate grid approaches, numerics and physics, as well as new auxiliary programs in the wave model program suite. Some attention will also be given to the code management at NCEP required to coordinate model development with a large number of teams involved.

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