



Operational Global Deterministic and Ensemble Wave Prediction Systems at Environment Canada

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Canada's new global deterministic and ensemble wave prediction systems are presented together with an evaluation of their performance over a 5 month hindcast. Particular attention is paid to the Arctic Ocean where accurate forecasts are crucial for maintaining safe activities such as drilling, and vessel operation.

The wave prediction systems are based on WAVEWATCHIII and are operated at grid spacings of $1/4^\circ$ (deterministic) and $1/2^\circ$ (ensemble). Both systems are run twice daily with lead times of 120h (5 days) for the deterministic systems and 240h (10 days) for the ensemble system. The wave prediction systems will be shown to have skill in forecasting significant wave height and peak period over the future several days. Beyond lead times of 120h, deterministic forecasts are extended using ensembles of wave forecasts to generate probabilistic forecasts for long-range events. New displays will be used to summarize the wealth of information generated by ensembles into depictions that could help support early warning systems.