



## **Can statistical post-processing of marine wind forecasts improve the wave forecasts from WAM?**

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It has often been said that the biggest impediment to high quality real time wave forecasts is the inaccuracy of the operational marine wind forecasts which are used as input. Accordingly, we have been working on ways of systematically improving the quality of wind forecasts coming from the Canadian atmospheric forecast model GEM, in order to improve the wave forecasts that are produced in real time using the European community wave model WAM.

Model Output Statistics (MOS) is a proven method of post-processing model forecasts of surface weather elements. An updateable version of MOS called UMOs has been used operationally in Canada to produce forecasts of weather elements at land stations since 2000. Using the UMOs structure, we developed a set of regression-based forecast equations for marine surface (10m) wind speed and direction at buoy locations along the Canadian and US East coast and west coast, and for the Great Lakes. We obtained best results by fitting the model forecast output directly to the observed buoy winds, even though these are not represented at 10 m. The resulting forecast equations, valid for the buoy locations were used to predict winds on the wave model's regional grid for input to the wave model.

WAM runs with the MOS winds were compared with the same runs using the direct model output winds for the east coast and Great Lakes areas. The results of these comparisons will be shown in the presentation and the question in the title of the paper will be answered.