Evaluation of ship icing algorithms against unique ice accumulation data in Norwegian waters

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Icing on ships is a major concern when operating in the Arctic waters during freezing conditions. Collision between ships and waves is the most important water source in dangerous icing events. Several algorithms have been developed during the last decades to forecast this phenomenon. Until this day forecasters at MET Norway have made forecasts of wave-ship collision icing with little or no feedback from observations. In this study different icing algorithms used in operational forecasting are tested against a unique observational data set of both ice accumulation on the ships and important atmosphere and ocean variables used as input data for the algorithms. The observations are taken by the Norwegian coast guard in the period 1980-2000. In addition adjustments of these algorithms and a new proposed algorithm are evaluated against the observations.

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