Validation of the Baltic Sea Ice ensemble forecasting

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For the monthly/seasonal forecasting of the Baltic Sea ice, ensemble probability prediction system is set up and forced by ECMWF ensemble forcing which consists of 51/40 ensembles members, respectively. Here we present validation for quantifying the uncertainties in this monthly and seasonal prediction that gives more accurate guidance to practical users. This validation includes ice thickness, concentration, and sea surface temperature with observed data using dichotomous and continuous statistical methods. Overall prediction on ice coverage in the Gulf of Finland and the Bothnian Bay are excellent, but the ice thickness prediction is limited and under estimated because there is only one ice category of the model used. Basin scale features are also studied and the time series of index agreement for ice covered area is excellent. The freezing date and ice growth ratio, melting date and ice melting ratio are in good agreement with climatology (1952-2005). Probabilities produced by this system are reliable.