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Experiences from Arctic field campaigns: Weather forecasting and evaluations, and model comparisons

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Over the last decades the Swedish icebreaker Oden has had atmospheric research mission to the central Arctic four summers; 2001, 2008, 2014 & 2018. The data brought back from these expeditions provides invaluable detail on conditions and processes that can be used to test models and model formulations. But the field campaigns also rely on weather forecasts for the operations. One very special aspect of weather forecasting for central Arctic expeditions is the very limited bandwidth. The forecast material available to the ship's meteorologist is typically very limited, a few forecast maps, some of the expeditions own observations and real-time satellite imagery from polar orbiters.

In this presentations we will explore the data gathered during such expeditions and how it has been used for model testing. We will also review what forecast material that has been available, with a focus on the latest endeavor: Arctic Ocean 2018 expedition (AO18). This expedition took place during August and September 2018, during the tail end of the Year of Polar Prediction (YOPP) Arctic Summer Special Observing Period (SOP). For AO18, YOPP in collaboration with the EU HORIZON2020 project APPLICATE provided a set of specialized forecast for AO18 based on the ECMWF IFS model; forecast were also evaluated in near-real time and some of the results will reviewed.

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