Making Use and Sense of 75,000 Forecasts of the Sea Ice Drift Forecast Experiment (SIDFEx)

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The Sea Ice Drift Forecast Experiment (SIDFEx) is a Year of Polar Prediction (YOPP) community effort to solicit, collect, and analyze sea ice drift forecasts, based on various methods, on a regular basis. SIDFEx is inspired by research and operational needs to forecast future positions of assets drifting in Arctic sea ice. Beside a number of sea-ice buoys of the International Arctic Buoy Programme, current targets include the MOSAiC drift campaign main site (and distributed network) for which consensus forecasts are delivered every six hours. A systematic assessment of real drift forecasting capabilities across operational and research forecast systems is meant to improve our physical understanding of sea ice and to identify and resolve model shortcomings.

Since the launch of SIDFEx in 2017, thirteen groups have started contributing drift forecasts to SIDFEx on a regular basis. Most groups derive their 2-days to seasonal-range forecasts by means of diagnostic tracking based on prediction drift fields of coupled or uncoupled general circulation models. Some groups submit ensembles of drift trajectories instead of single (deterministic) trajectories, and several groups submit their forecasts in real-time. We present results from around 75,000 individual forecasts, how they have been used for real-time support of the MOSAiC Arctic drift campaign since autumn 2019, and what they reveal about current models' capabilities to forecast sea-ice drift and deformation.

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