EGU2020-18867

Sea Ice Drift Forecast Experiment

SIDFEx 2017—2020

All the details at:

SIDFEx Team:

Helge F. Goessling, Axel Schweiger, Laurent Bertino, Ed Blockley, Wendy Ermold, Rüdiger Gerdes, Robert Grumbine, Yukie Hata, Jennifer Hutchings, Frank Kauker, Thomas Krumpen, Jean-François Lemieux, François Massonnet, E. Joseph Metzger, Malte Müller, Bimochan Niraula, Michael W. Phelps, Thomas Rackow, Till A. S. Rasmussen, Simon F. Reifenberg, Ignatius Rigor, Greg Smith, Amy Solomon, Nick Szapiro, Steffen Tietsche, Jinlun Zhang

SIDFEx is a community effort to collect and analyse Arctic sea-ice drift forecasts at lead times from days to a year. Forecasts are made with various methods for drifting sea-ice buoys and the trans-Arctic MOSAiC drift campaign.

2017 — YOPP Core Phase — 2018 — 2019 — pre-MOSAiC — 2020 — MOSAiC Drift

Phase I) Collect forecasts for selected IABP buoys

Phase II) Target points relevant for start position

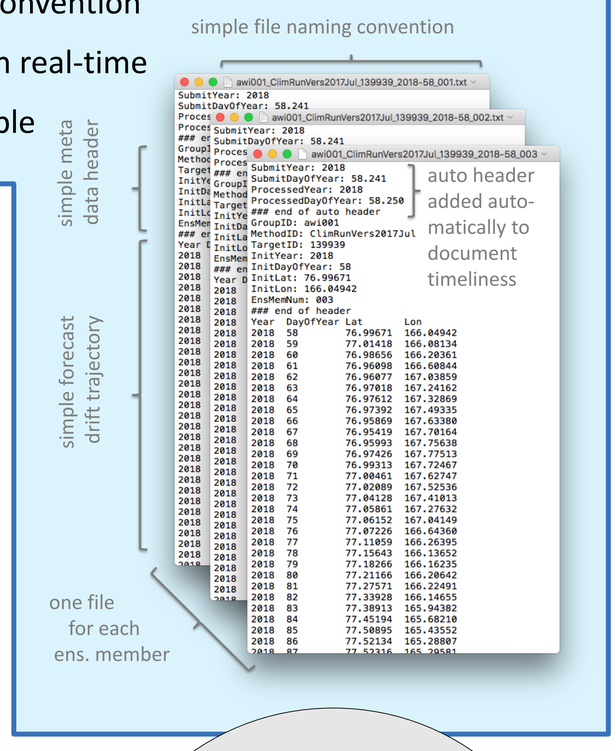
Phase III) Forecasts for operational support

Why SIDFEx?

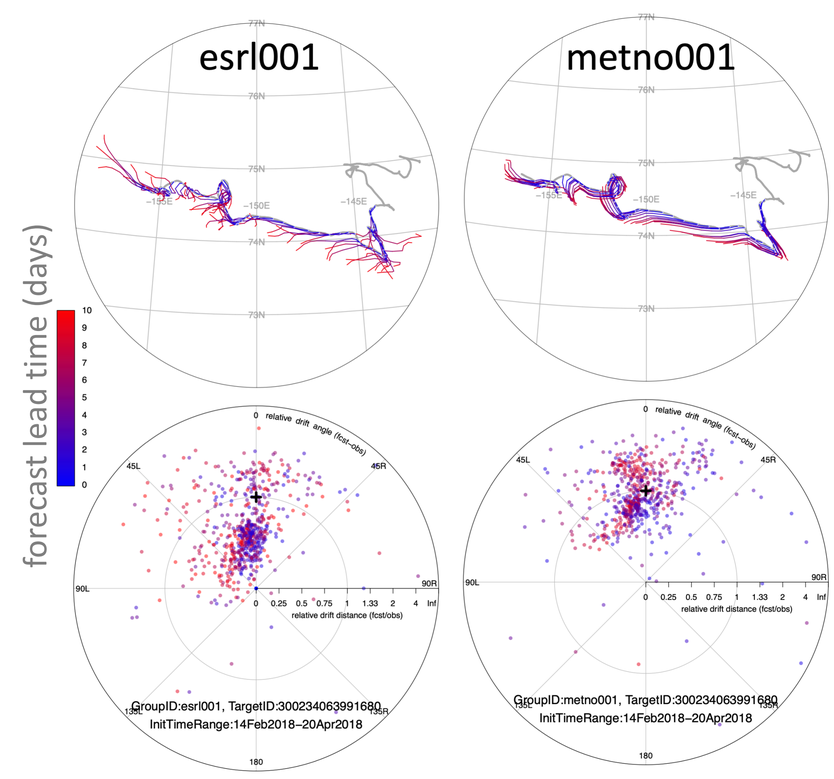
- to compare ice drift forecast skill across various systems
- to find hints toward forecast system improvements
- to support the MOSAiC campaign
- to develop "consensus drift forecast" techniques for future applications

Contributing to SIDFEx

- Any forecast method
- Simple format convention
- All data public in real-time
- Software available
- Upload process automatable

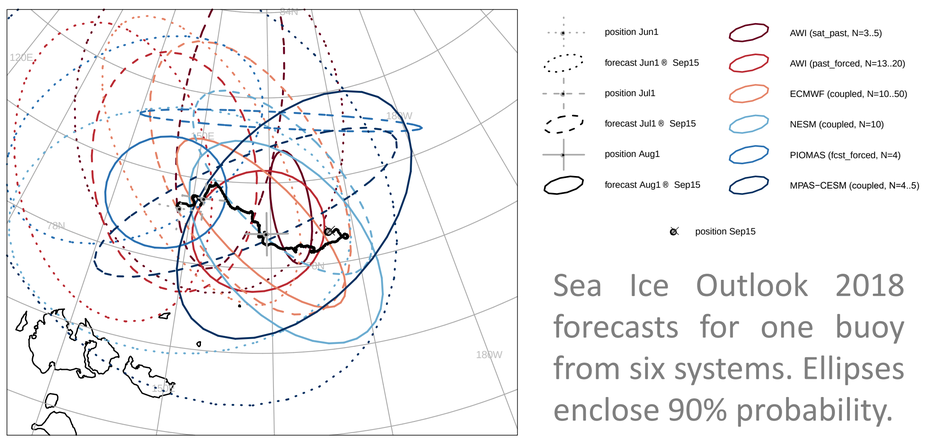


Short-term forecasts (example)



10-day forecasts for one buoy from two systems, daily initial times between 14 February and 20 April 2018. *Top*: Observed (grey) and forecast (coloured) trajectories. *Bottom*: Drift speed and angle relative to observations.

Seasonal forecasts (example)



Sea Ice Outlook 2018 forecasts for one buoy from six systems. Ellipses enclose 90% probability.

-> see SIO post-season reports: 2017 2018 2019

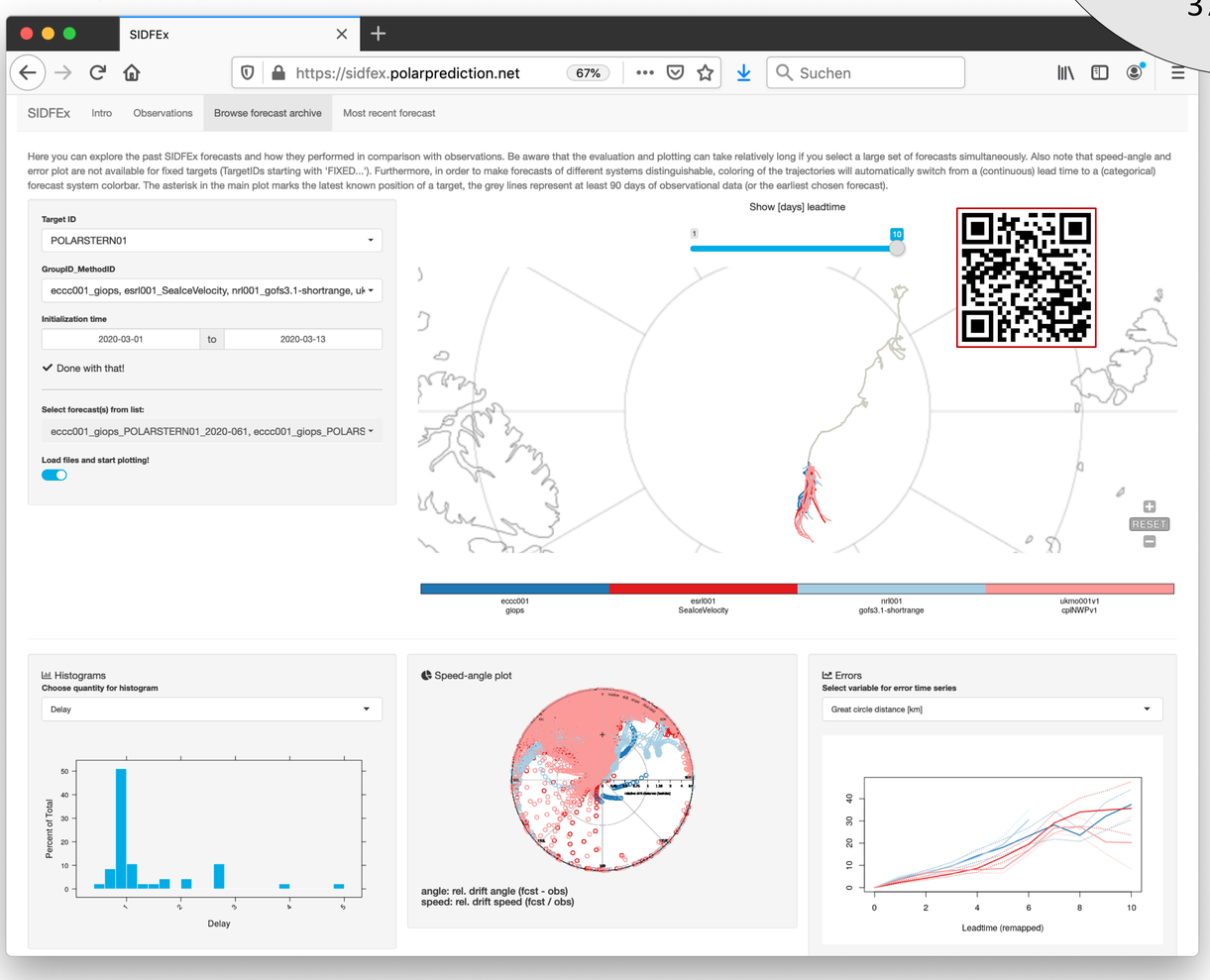
Statistics

(14 April 2020)

- 14 international groups
- 24 forecast methods
- 101,868 forecasts for *RV Polarstern* & 37 buoys

SIDFEx Webtool

to explore past and current forecasts

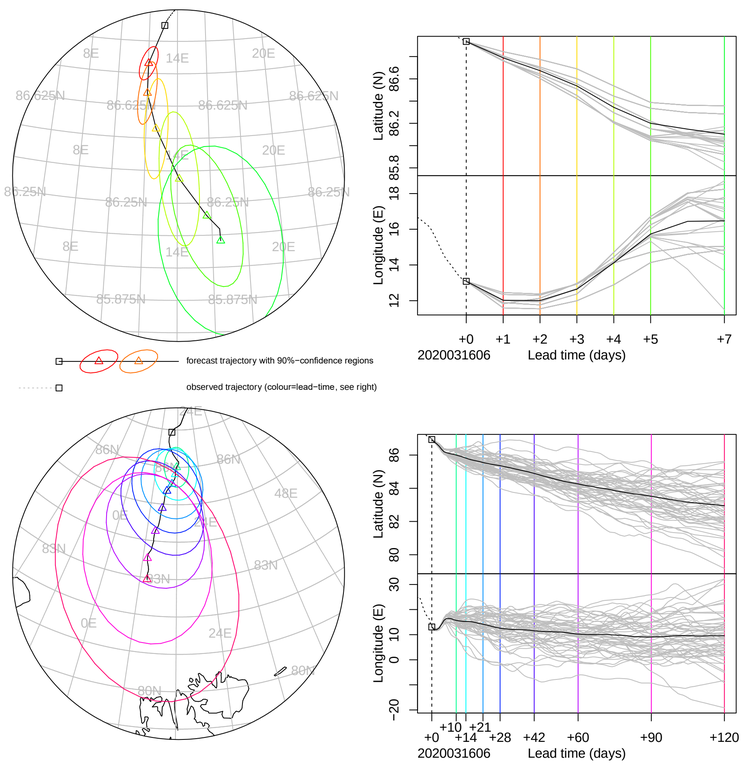


MOSAiC Consensus Drift Forecasts

Updated every 6 hours

Latest forecast:

Previous forecasts with verifying observations:



SIDFEx consensus forecast for the MOSAiC drift

Initial time (YYYYMMDDHH): 2020031606

Consensus forecast version: 20200221v0
Generated at: 2020-76.295
Forecasts included (age relative to initial time / remaining lead time range, both in days):
ukmo001v1_cplNWPv1 (1.25 / 8.75)
ukmo001v1_FOAMv1 (1.25 / 5.75)
ukmo001v1_cplNWP-HRv1 (1.25 / 8.75)
nrl001_gofs3.1-shortrange (1.75 / 4.75)
eccc001_giops (1.25 / 8.75)
esrl001_SealceVelocity (1.25 / 8.75)
ecmwf001_SEAS5 (15.25 / 108.75)

CC BY

Young Investigator Group Seamless Sea Ice Prediction

Federal Ministry of Education and Research