

## Data availability

A subset of the S2S and DM data used in this study are made available for inspection during the review process. The data are hosted at the Norwegian Meteorological Institute. They are formatted as NetCDF4 (classic) files, and follow the Climate and Forecast (CF) and Attribute Convention for Data Discovery (ACDD) conventions. All sea ice-drift products made available here are from the GCOM-W1 AMSR2 36.5 GHz imagery. The following data are prepared:

Northern Hemisphere covering 15 to 30 November 2019:

- S2S drift vectors (<https://doi.org/10.21343/q1e3-1489>);
- DM drift vectors (<https://doi.org/10.21343/dts5-bf20>);

Southern Hemisphere (Weddell Sea) covering 15 to 31 July 2019:

- S2S drift vectors (<https://doi.org/10.21343/0asd-6t60>);
- DM drift vectors (<https://doi.org/10.21343/yfj4-2528>);

We selected those two periods because they exhibited dynamic events in the sea-ice drift fields, including sharp spatial gradients and rotation patterns caused by low pressure systems. This should help demonstrate the different characteristics of the DM and S2S approach.