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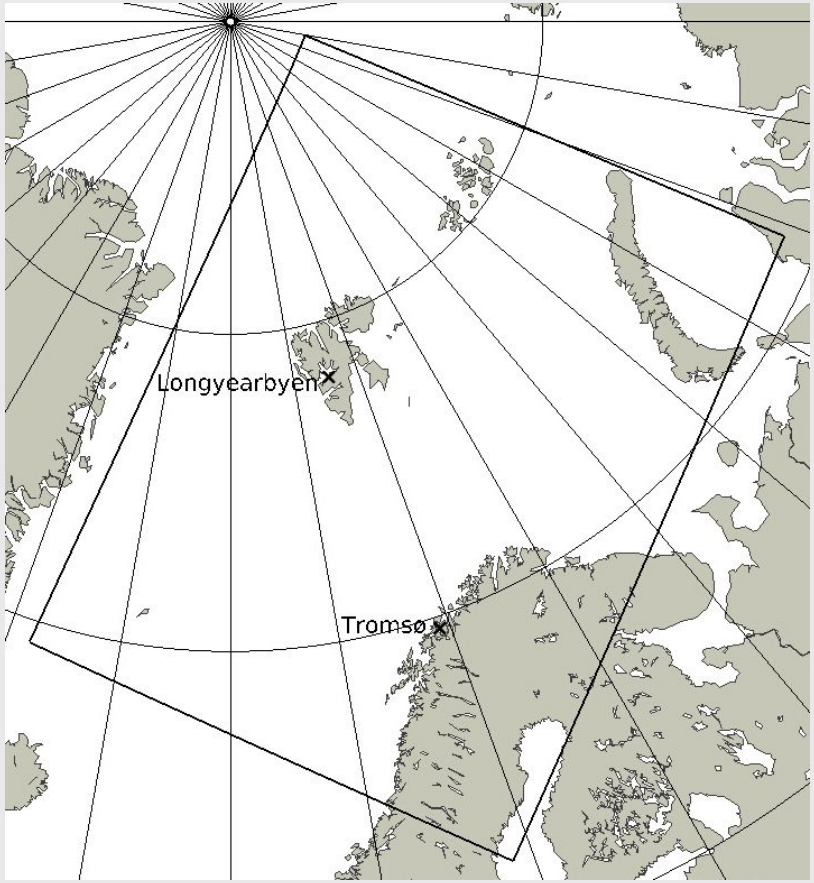
Storm forecast using AROME-Arctic mesoscale model

Ida Fossli

AROME-Arctic



Regional non-hydrostatic NWP model operated daily by MET Norway

- Harmonie cycle 38h1.2
- AROME physical parametrization
- 2.5km/65levels/10 hPa top
- Domain with 750x960 gridpoints
- Hourly boundaries from ECMWF
- Forecast length 66 hours
- ECOCLIMAP-2
- Surface assimilation (t2m, th2m, snow)
- 3DVAR (conventional, ATOVS, GNSS, ASCAT)
- 3-hours cycling
- SURFEX for surface modelling
- Simple Ice Scheme (SICE) for sea ice parametrization

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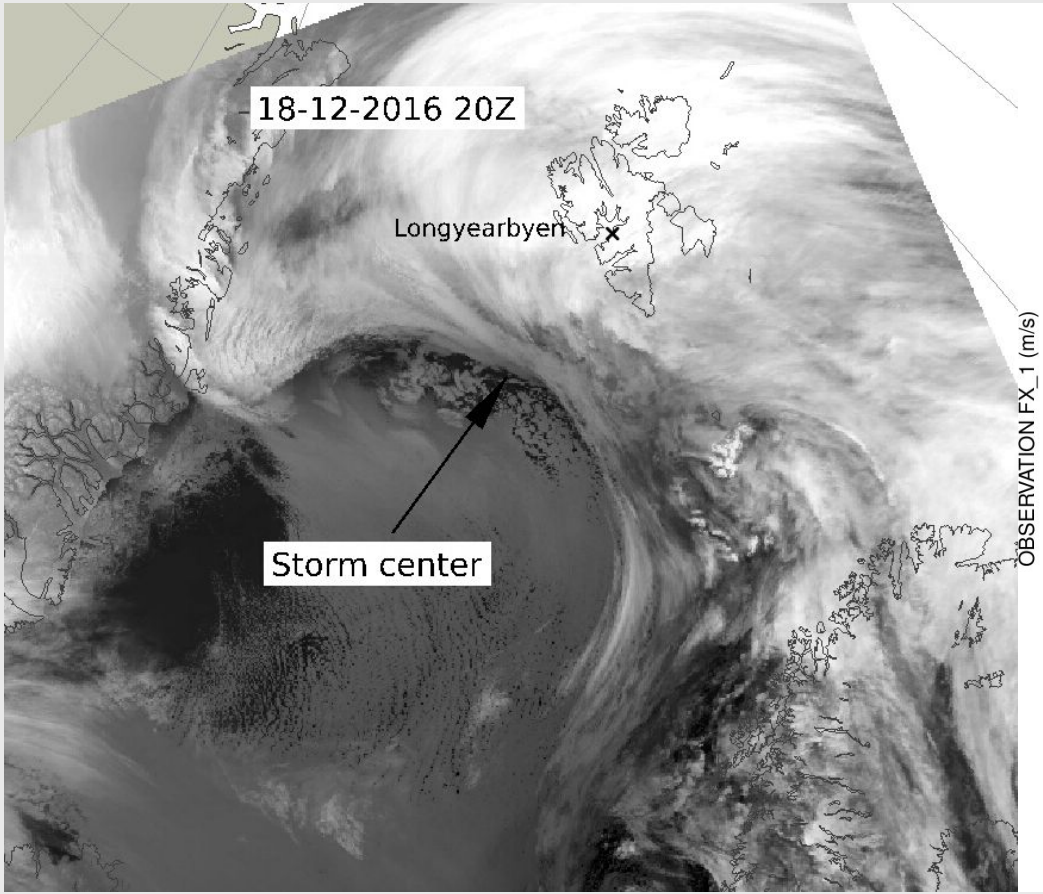
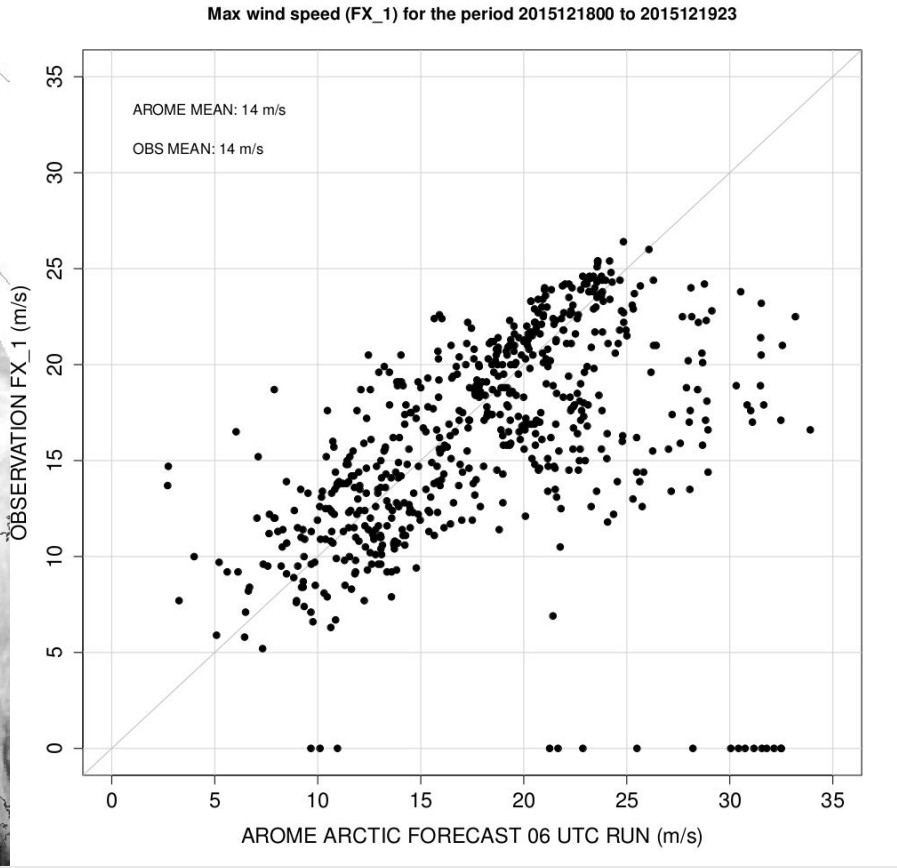
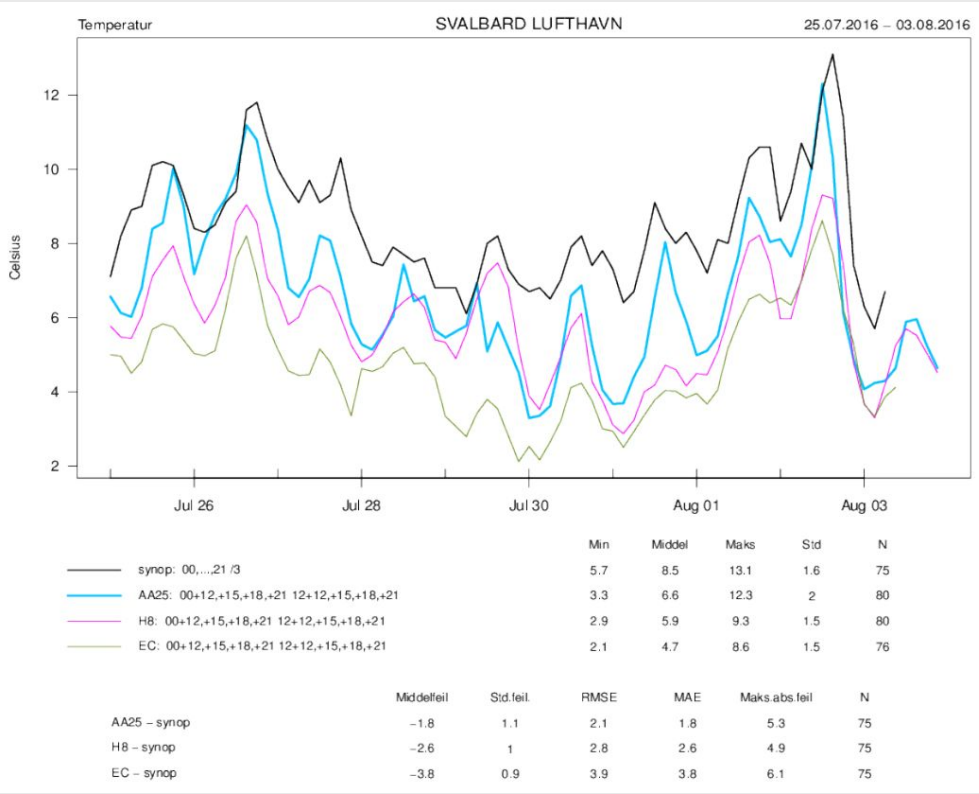
Svalbard Storm 18-19 December 2015



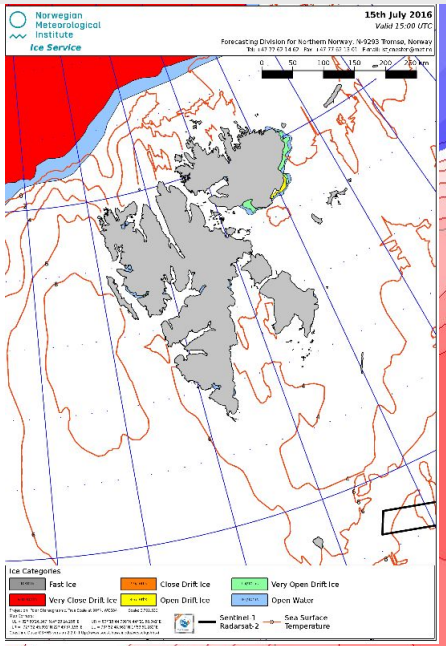


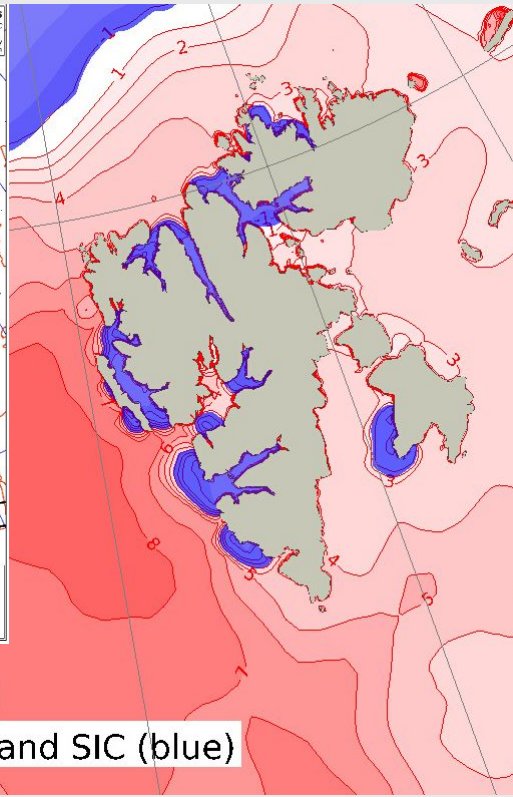
Ongoing development: sea ice representation



	Min	Middel	Maks	Std	N
synop: 00,...,21 /3	5.7	8.5	13.1	1.6	75
AA25: 00+12,+15,+18,+21 12+12,+15,+18,+21	3.3	6.6	12.3	2	80
H8: 00+12,+15,+18,+21 12+12,+15,+18,+21	2.9	5.9	9.3	1.5	80
EC: 00+12,+15,+18,+21 12+12,+15,+18,+21	2.1	4.7	8.6	1.5	76

	Middelfeil	Std.feil.	RMSE	MAE	Maks.abs.feil	N
AA25 – synop	−1.8	1.1	2.1	1.8	5.3	75
H8 – synop	−2.6	1	2.8	2.6	4.9	75
EC – synop	−3.8	0.9	3.9	3.8	6.1	75





AROME-Arctic SST (red) and SIC (blue)

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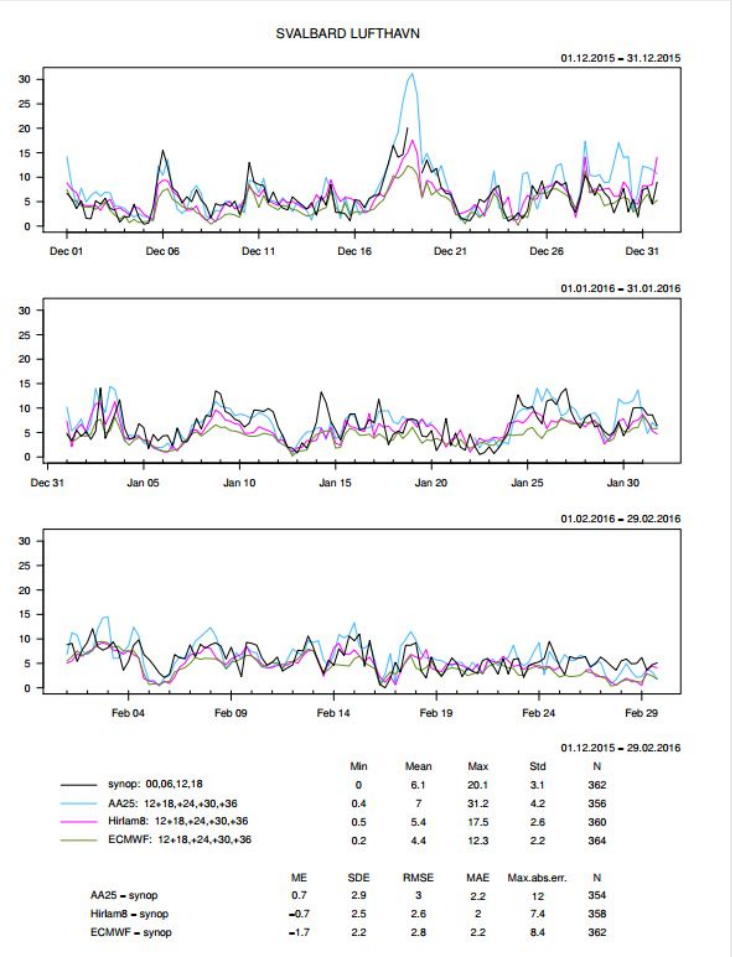
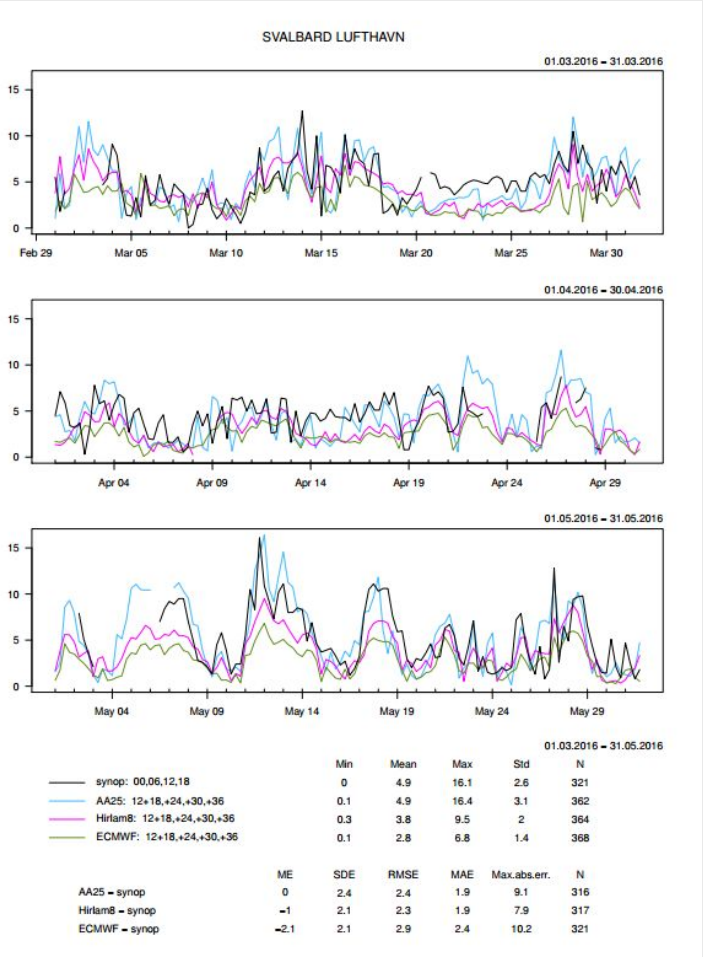
AROME-Arctic: Verification





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