



UNIS

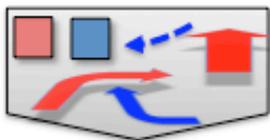
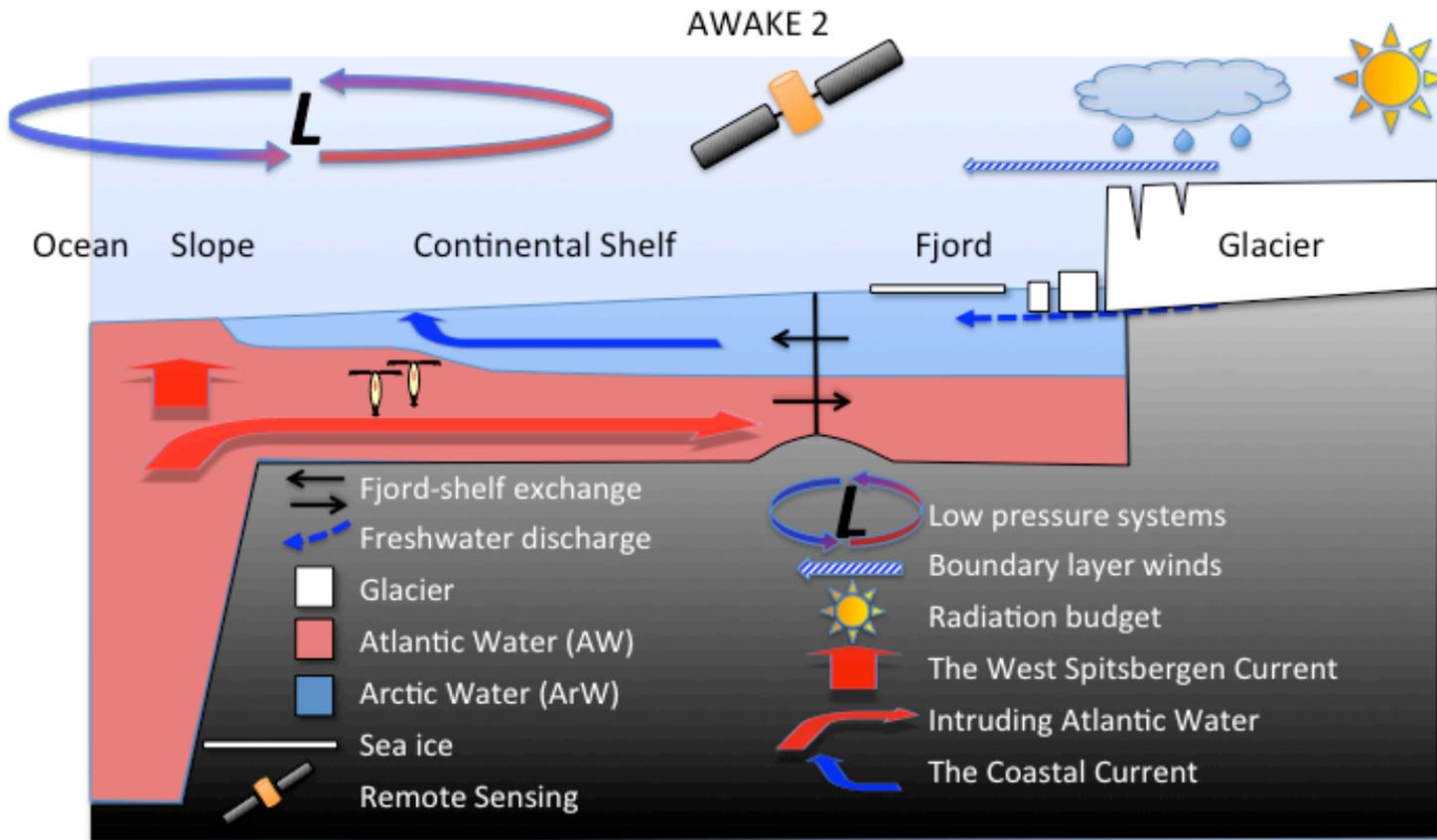


WP 4: Sea ice

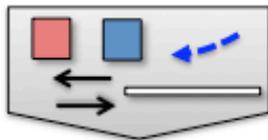
UNIS, NERSC, met.no

Frank Nilsen (UNIS)

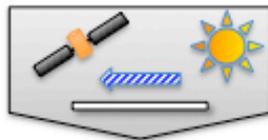
AWAKE-2



Open ocean (WP 2)



Fjords (WP 3)



Sea ice (WP 4)



FW from land (WP 5)



Atmosphere (WP 6)

WP 4 Task



- T4.1: Compilation of satellite data from the Svalbard area (NERSC)
- T4.2: To analyse the sea ice data for specific fjords and shelf areas (NERSC)
- T4.3: Air-ice-sea interactions study based on fjord-polynya model (UNIS)
- T4.4: To analyse the response of the sea ice cover to atmospheric and ocean forcing (NERSC, Met.no, UNIS)

WP 4 Deliverables

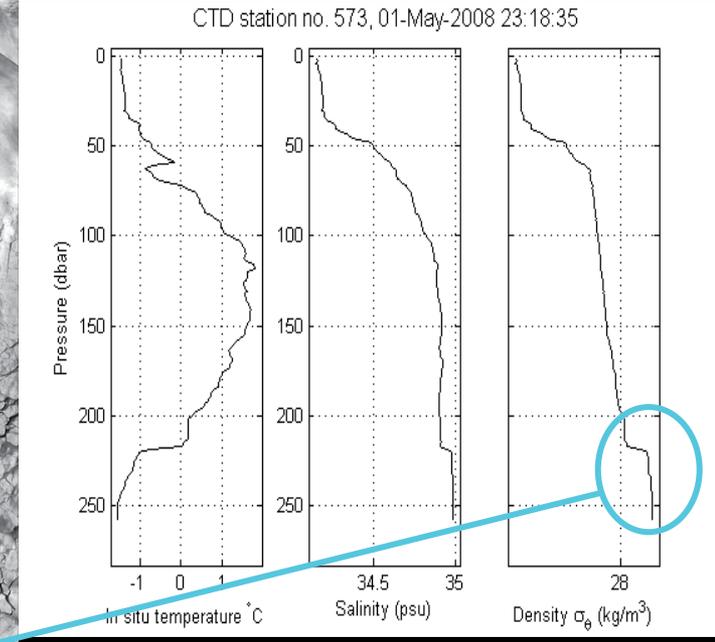
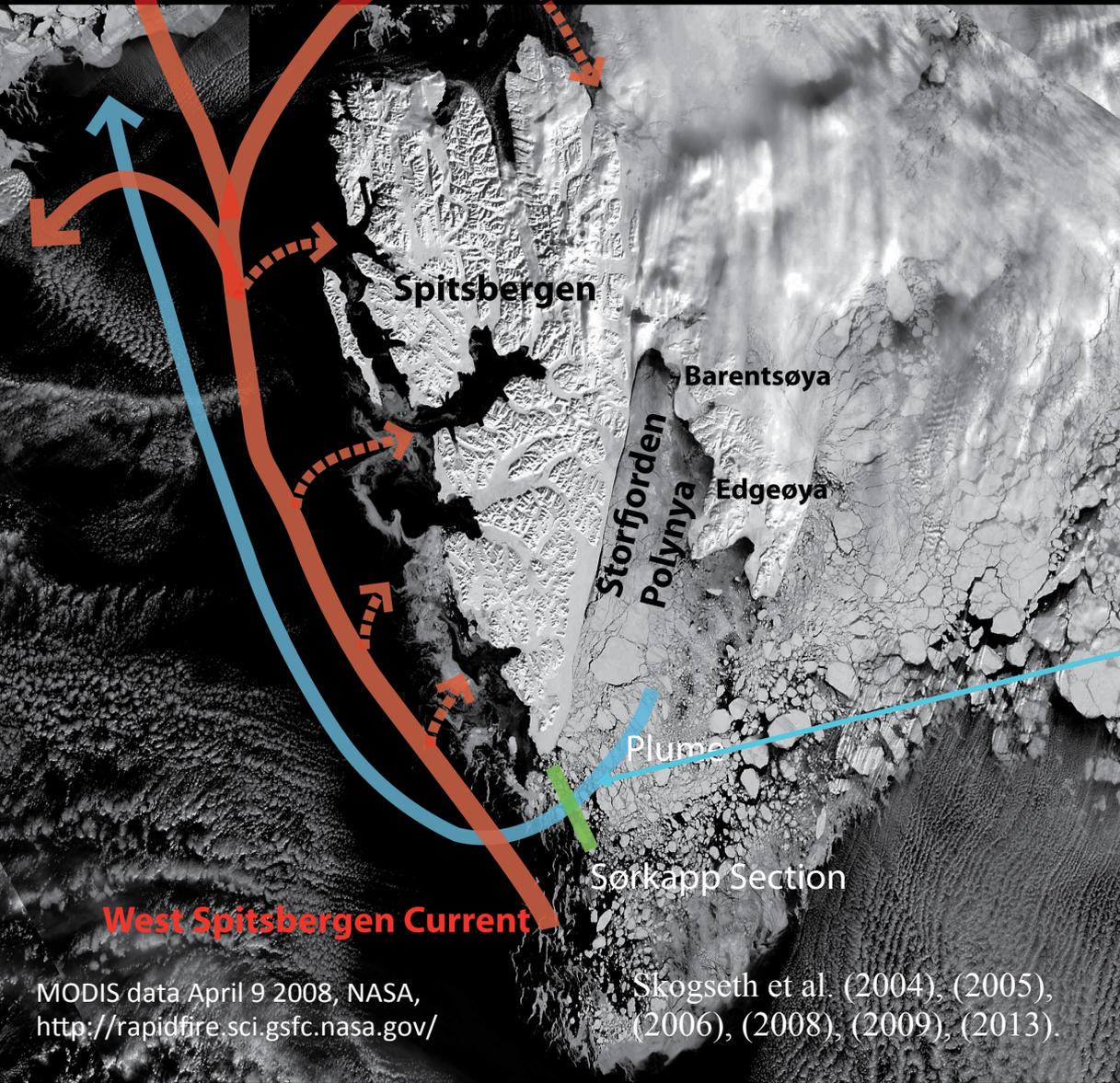


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- D4.1: Sea ice database for 2000-2016 (12)
- D4.2: Sea ice area time series (2000-2016) for fjord systems, sea ice type (thickness) classification and ice drift (24)
- D4.3: A time series (2000-2016) of sea ice and dense-water production in Spitsbergen fjords (36)
- D4.4: A qualitative description of the causal relation between sea ice cover, atmosphere and ocean temperature and wind forcing (36)

Sea ice factories & arctic fjord oasis



Dense water plume from Storfjorden

<http://www.forskning.no/artikler/2008/mai/183309>

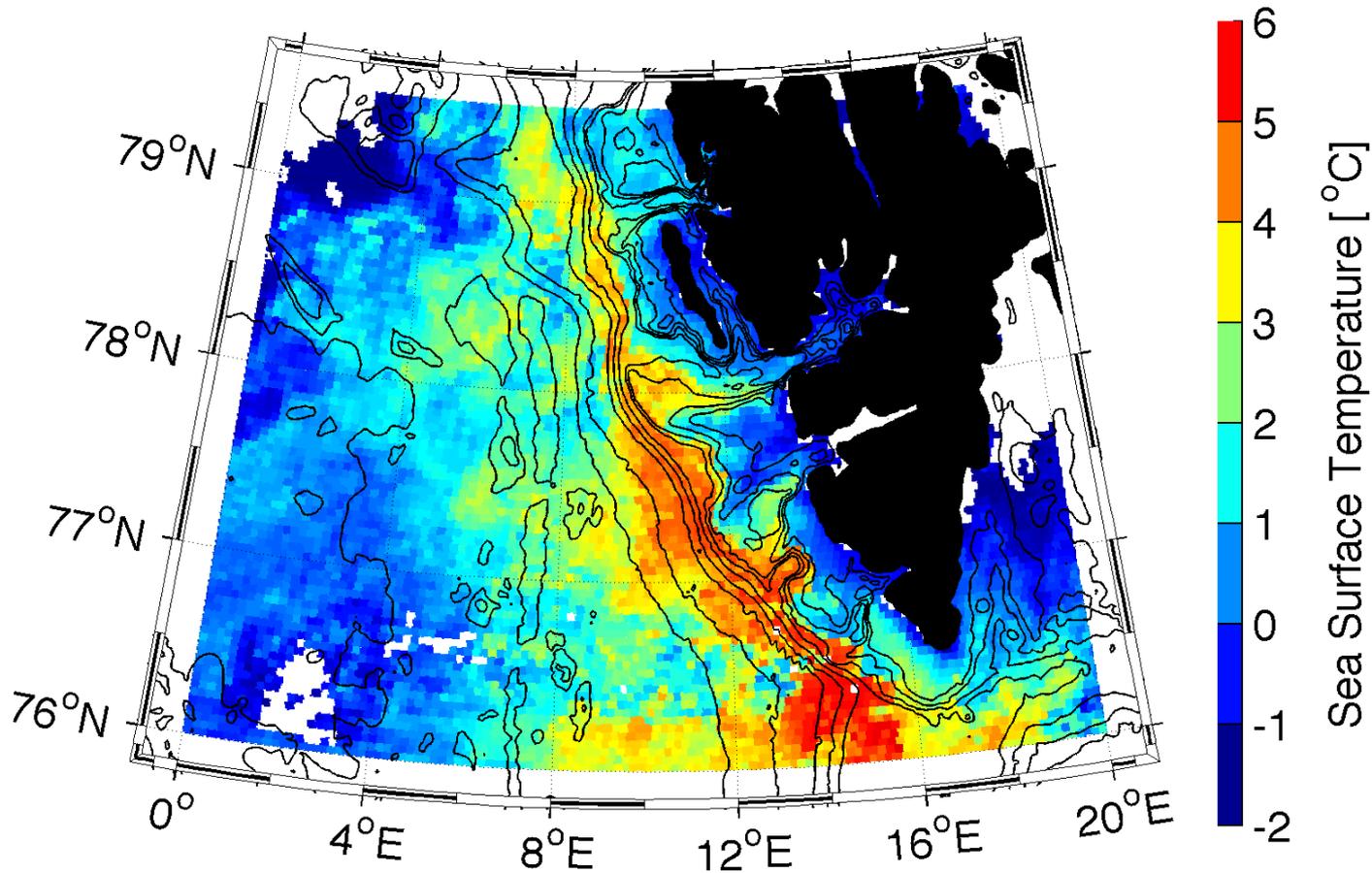
MODIS data April 9 2008, NASA,
<http://rapidfire.sci.gsfc.nasa.gov/>

Skogseth et al. (2004), (2005),
(2006), (2008), (2009), (2013).

Atlantic Water on the WSS



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Two first weeks of January 2008

Reprojected MODIS SST data by A. Korosov & S. Sandven (NERSC)

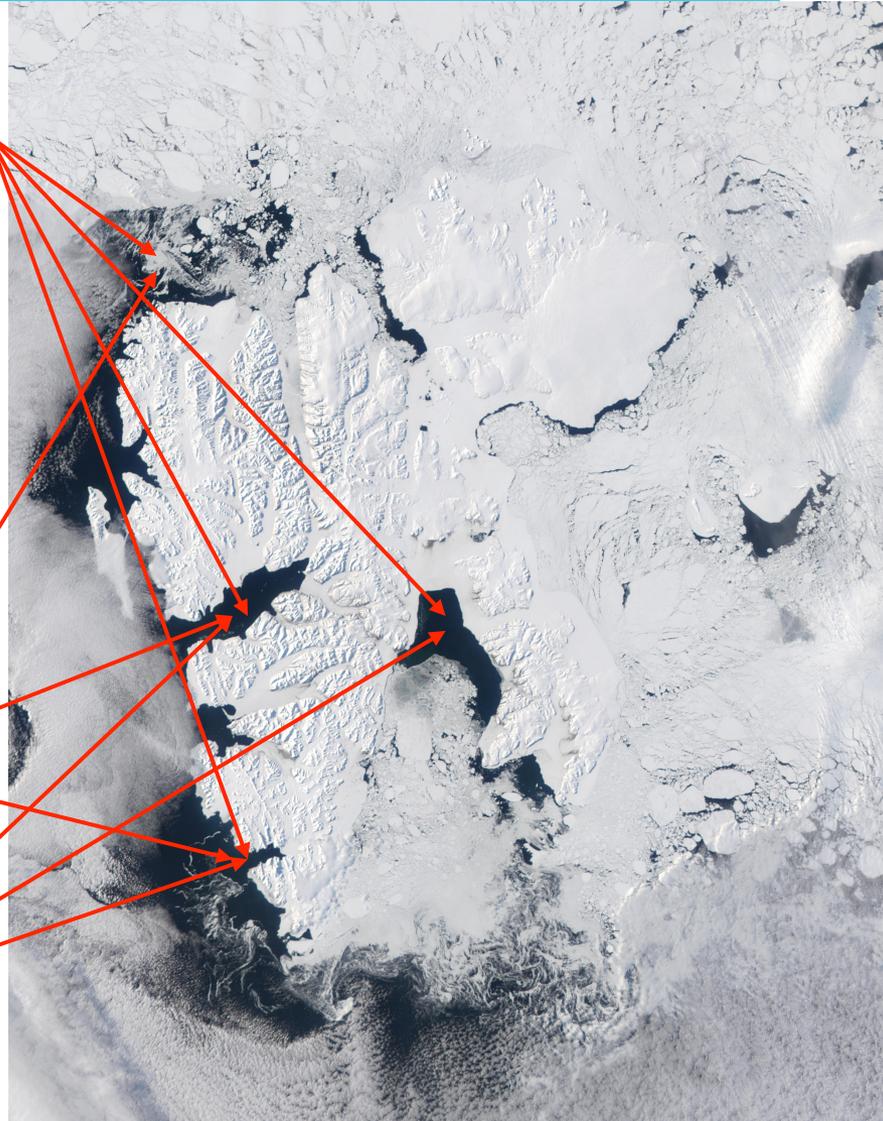
Polynya definitions



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- A polynya (Russian: ice hole) is “any non-linear shaped opening enclosed in (sea) ice”. (WMO, 1970).
- Area: 10 to 10⁵ km²
- Width: 100 m to 100' s km
- Sensible heat polynya
 - Thermally driven
 - Whaler' s Bay Polynya
- Latent heat polynya
 - Mechanically driven
 - Storfjorden Polynya



WP 4 program



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Stefan Muckenhuber (NERSC):
Sea-ice cover in Isfjorden & Hornsund

Martin Arntsen (UNIS): Modeled ice
production and brine release in Hornsund