



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

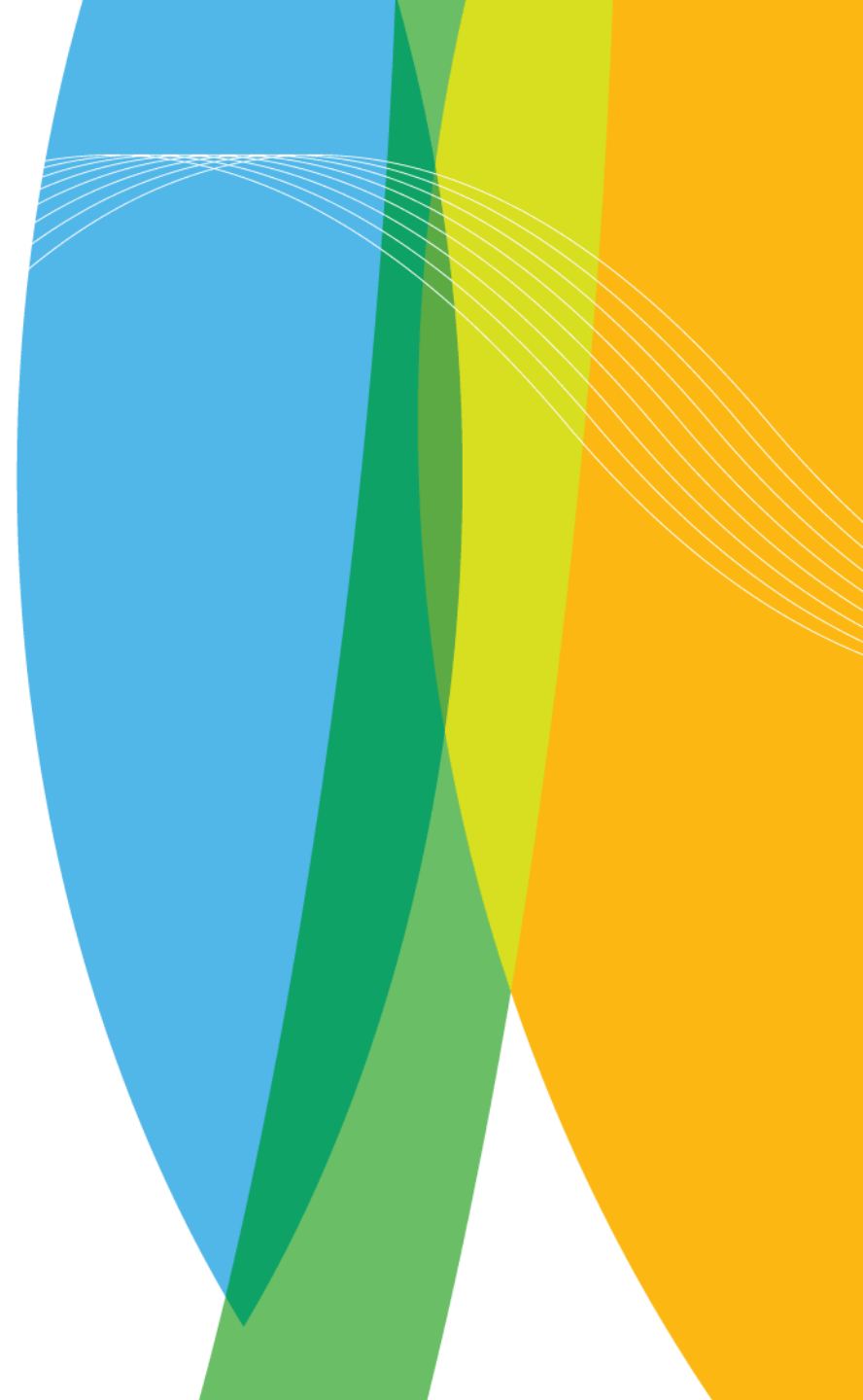
A new satellite albedo product of the Arctic: CM-SAF SAL

Aku Riihelä

UHA/MAP

Snow co-operation kick-off

26.3.2009





Satellite albedo of the Inner Arctic (SAL)

- **Pros**

- Full Arctic coverage, unobtainable by in situ observations
- Operational coverage of sea ice albedo and sea ice extent
- As a Climate-SAF product, the product **does not cost anything** for user\$.

- **Cons**

- The snow albedo algorithm still has a negative bias. Cause is believed to be known and corrective measures are underway.

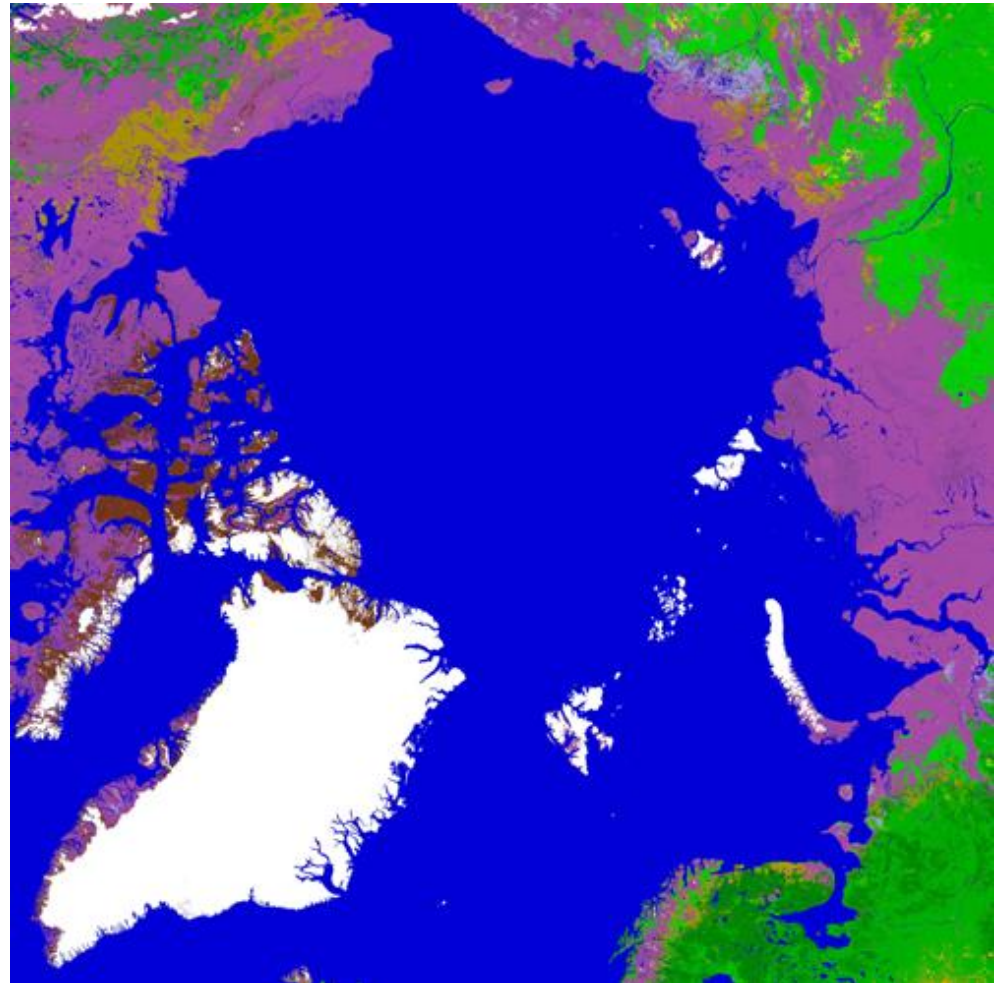


Inner Arctic SAL - features

Surface broadband albedo in the shortwave region: $0.25 - 2.5 \mu\text{m}$

Derived operationally from NOAA-17, -18 and MetOp

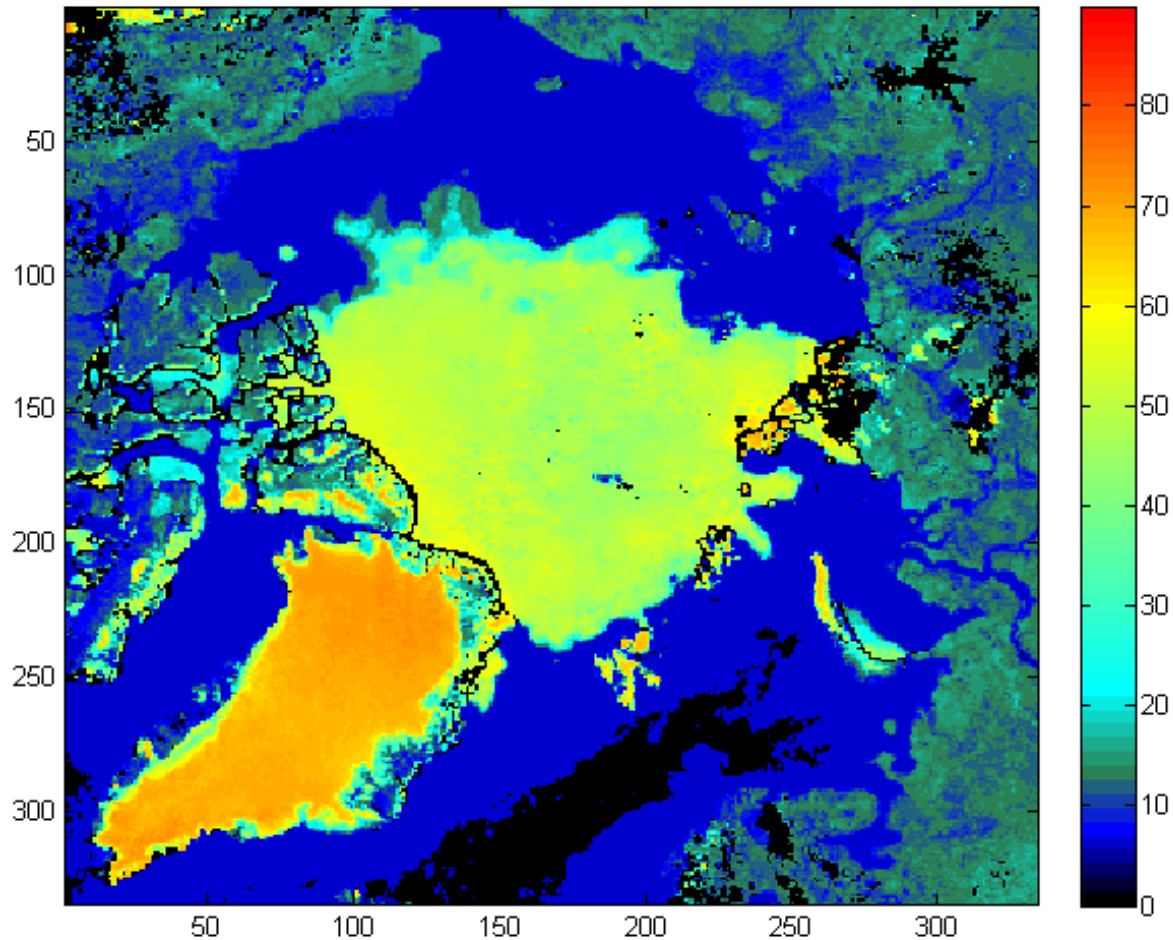
Target accuracy is 25% (relative)





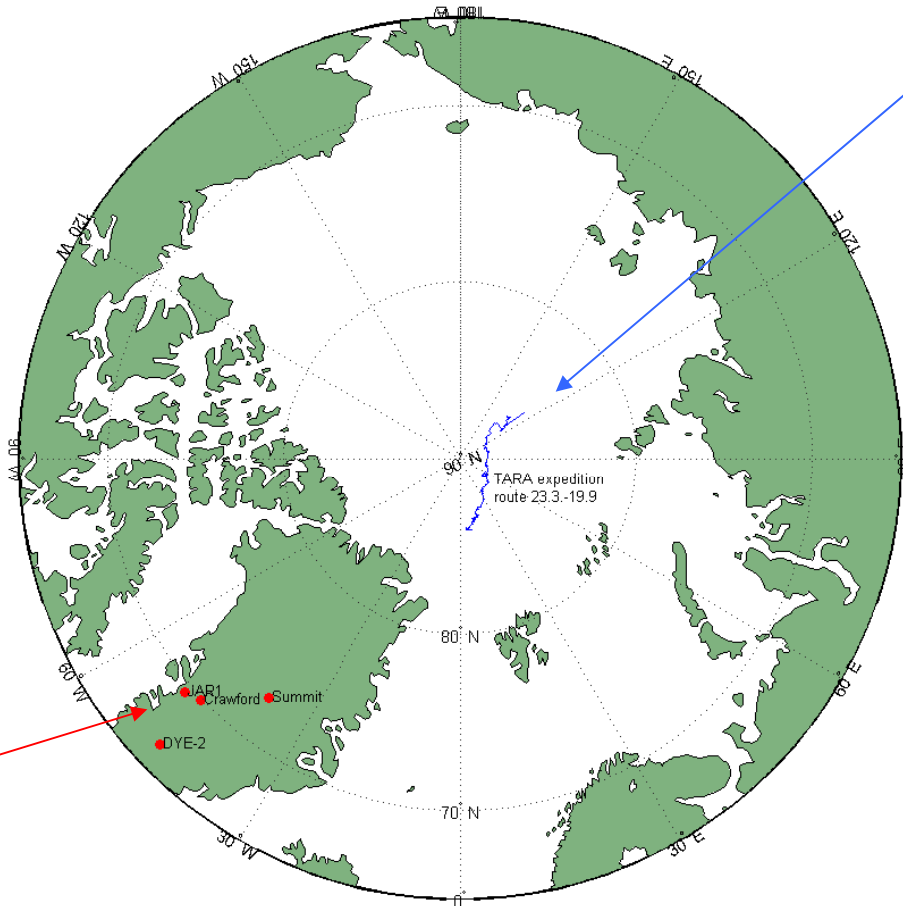
Product example

Weekly mean of surface broadband albedo, 9.7.2007 – 16.7.2007





Product validation thus far

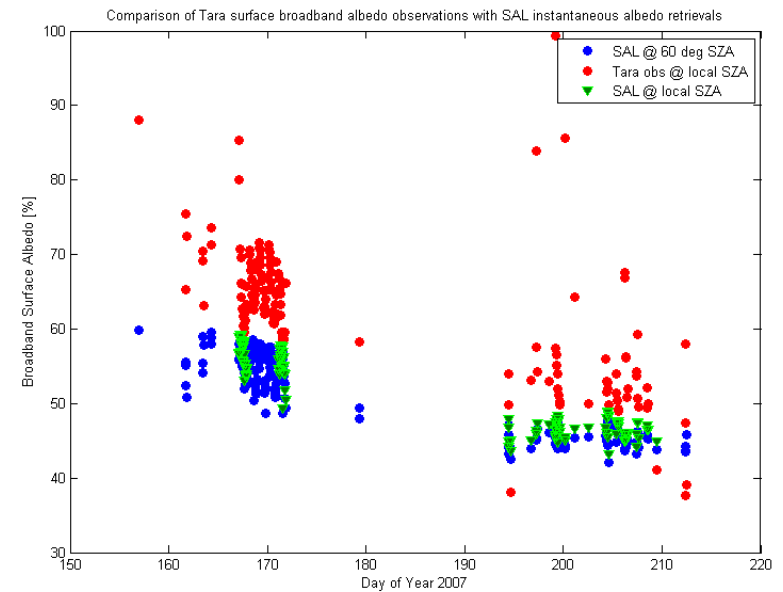
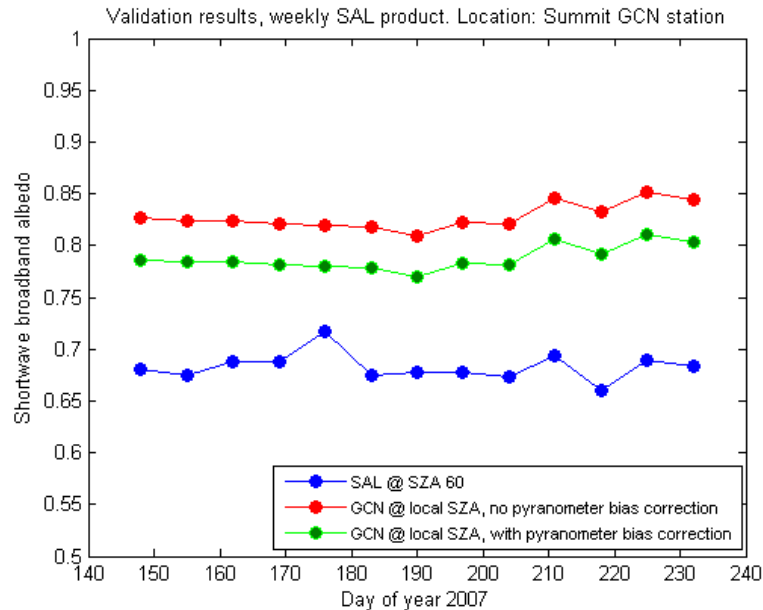


Tara schooner observations

Greenland Climate Network



Some validation results



A noticeable bias (~ 0.1) resulting from an incorrectly applied BRDF correction, which we are working to alleviate.



For more information & Outlook

- www.cmsaf.eu
 - Products, ATBD, service messages, etc.
 - Aku.riihela@fmi.fi
 - Product code should be available for local FMI work, if needed.
 - Operational product generation at ECMWF since 1/2009, products can be made available on a constant basis or by order.
- The product is planned to be improved...
- By a different BRDF scheme
 - By examining the concurrent use of microwave observations to aid surface albedo estimation
 - By applying recent & future snow field campaign data (SNORTEX 2008 & 2009, Greenland 2010?)