



Atmospheric Observation in the Arctic

Vito Vitale

Institute of Atmospheric Sciences and Climate (ISAC-CNR)



SCOPE and COVERAGE

- picture of spatial distribution of atmospheric observations in the Arctic at different levels of accuracy:
 - any related activity,
 - grouped/sub-divided by topics, atmospheric region
 - grouped by networks
 - grouped in categories (level of co-located measurements)
 - level of continuity/historical record
 -
- identify status of observations with respect scientific questions, users, stakeholder needs (including modelers, space Agencies,....)
- cover Arctic as well sib-Arctic region (flexible - no need to be precise and esclusive)



CHALLENGES

- To be simple/friendly in collecting information but till able to group activities, make classification and cluster of stations, etc. etc...
- Collect ancillary information to observations: methodology, quality assurance, standards/traceability of observations
- Identify the level of accuracy wer like to reach
- Identify for each topic a set of basic parameters (ECVs) combining/implementing ther different schemes/sets developed up now at different levels
- Develop graphical instruments to put at disposal of users this uge amount of information, and help them to identify what they need.



NETWORKS IN THE ARCTIC



AERONET sun photometric network





SAON CON meeting, Fairbanks, March 12, United States



IASOA	International Arctic system to Observing the atmosphere	http://www.esrl.noaa.gov/psd/iasoa/dataataglance
AEROCAN	Canadian Aerosol sun-photometric Network	http://www.aerocanonline.com/sites.html
SIOS	Svalbard Integrated Arctic Earth Observing System	http://www.sios-svalbard.org/prognett-sios/Infrastructure/1253964822756
OOPC	Ocean Observation Panel for Climate	http://inc-gnos-oopc.org/obs/surface_insitu.php
INTERACT	International Network for Terrestrial Research and	http://www.eu-interact.org/about-interact/
	Monitoring in the Arctic	http://www.eu-interact.org/field-sites/
GTN-P	Global Terrestrial Network for Permafrost	http://gtnp.arcticportal.org/index.php/data/data-handling/19-data/mining/80-protocols-good-work-practices http://gtnp.arcticportal.org/index.php/resources/maps/12-resources/37-maps-boreholes
GCW	Global Cryospheric Watch	http://gcw.met.no/metamod/search
AMAP	Arctic Monitoring and Assessment Programme	http://www.amap.no/maps-and-graphics

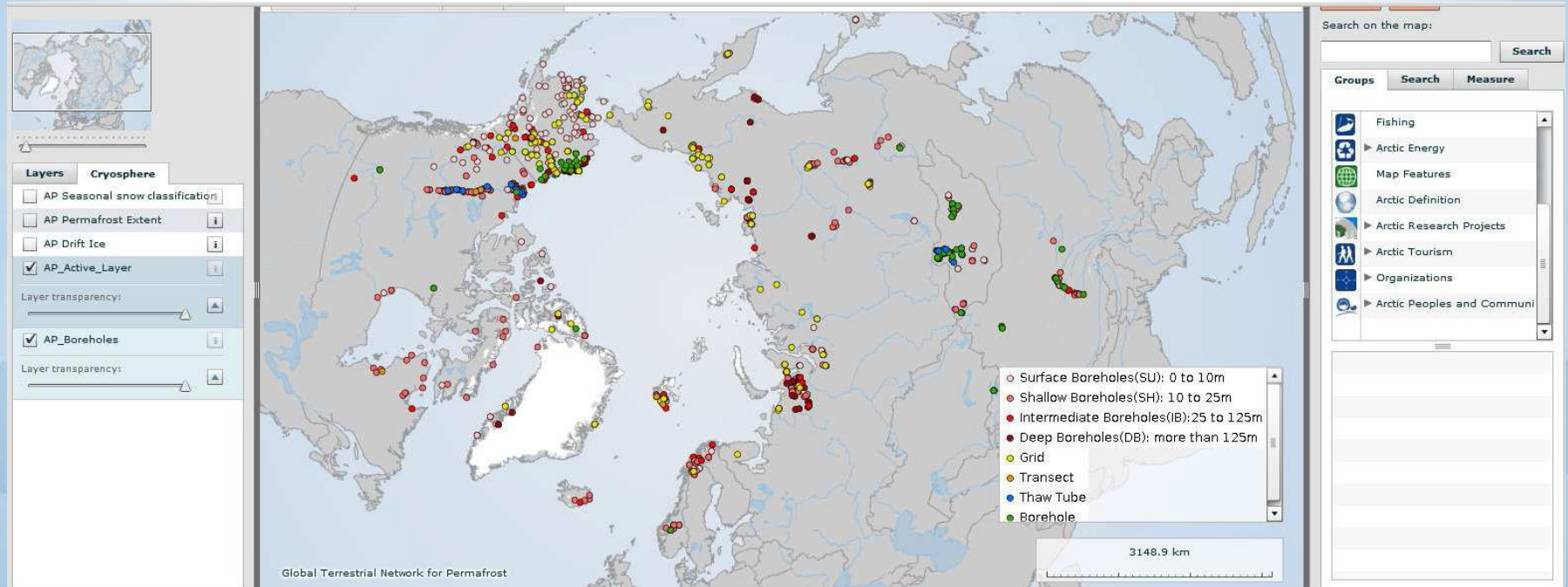
at EUROPEAN level potentiality for ACTRIS, ICOS

potentially new network for stratosphere from NASA - PANDORA

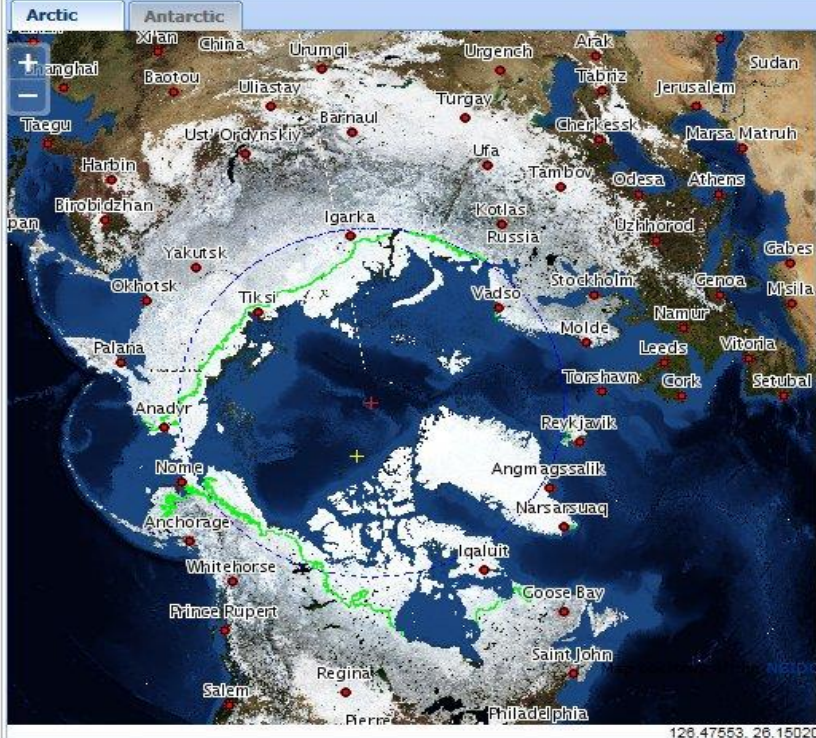
<http://acdb-ext.gsfc.nasa.gov/Projects/Pandora/index.html>



SYNTHESIS/DISSEMINATION OF METADATA and DATA



Arctic portal make use of 13 categories. For each categories a set of layers is provided in order to produce composite maps where data arising from different data sets can be combined and shown all together to provide a more consistent picture.



Collections Results Metadata Data

Choose a Data Collection to Search:

Polar Data Catalogue

[View More Info...](#)

Canadian Ice Service Sea Ice Charts

[View More Info...](#)

RADARSAT Polar Science Dataset

[View More Info...](#)

RADARSAT-2 Mosaics of Antarctica

[View More Info...](#)

<https://www.polardata.ca/pdcsearch/>



OPPORTUNITIES FOR IMPROVEMENTS – NEXT STEPS

- EU H2020 call (BG-09 – Integrated Arctic Observing System) will implement an action to better integrate and improve activities performed in Europe as well as US and Canada (due to political situation till a problem how to connect with Russia)
- dialogue with NMIs to strenght traceability and uncerteinty evaluation in the Arctic mainly in relation to atmospheric measurements is started, and joint proposal submitted. If founded we could have as test case a calibration lab in NYA.
- use IASOA network to amliorate level of information select for different topic set of parameters to simplify requests/collection of information
- use of SAON CON first tier level to improve thematic inventory
- what more ?



Thank you for your attention



SAON CON meeting, Fairbanks, March 12, United States

