

# Summary and overview of workshop - 1

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# Overview of topics

Ocean mooring data  
INTAROS/IMR

Oceanographic  
measurements  
IOPAN

- *Lots of data to manage*
- *Different instrumentations*
- *Overview of metadata standardization*
- *(Meta)data harmonization effort*
  
- *CTD/Moorings/Argo Floats/Ocean profilers/Biology samples*
- *Data standardization can be difficult*
- *Finding the more appropriate standard/convention/vocabulary*



# Overview of topics

Ocean mooring data  
INTAROS/IMR

Oceanographic  
measurements  
IOPAN

Arctic Ocean Observation  
System  
NERSC

- *Deploying instrumentation is a big effort, human and logistics*
- *Long term perspective for infrastructure is crucial*
- *New generations need to know about Data Management*
- *A more clear definition of roles and responsibilities is needed*



# Overview of topics

Oceanographic  
measurements  
IOPAN

Ocean mooring data  
INTAROS/IMR

- *Systems for Arctic conditions*
- *Cover a large area of the sea*
- *Navigation support, Search & Rescue*
- *Sea-ice classification with deep learning*
  
- *Low-cost drifters with high resolution*
- *Time series of Ocean waves*

Arctic Ocean Observation  
System  
NERSC

Unmanned aerial vehicle  
(UAV)  
Maritime Robotics

Drifters  
METNO



# Overview of topics

Ocean mooring data  
INTAROS/IMR

Core Data Ocean  
SIOS

IceWatch  
METNO

Oceanographic  
measurements  
IOPAN

Arctic Ocean Observation

- *In situ live observation of ice*
- *Difficult to train people, lack of boats participating*
- *Lack of standardization*
  
- *Commitment for long monitoring*
- *Not enough coverage & biological data*
- *Lack of FAIR training and data harmonization*

Drifters  
METNO



# Breakout sessions

Discussion on:

- Gaps in data delivery chains
- Gaps between data collection and publication requirements
- Gaps in knowledge and FAIR implementations
- Clarification of roles and responsibilities
- Opportunities to improve and create a network



# Main points (1)

- Lack of preparation in Data Management/FAIR
  - Data management project inviting data collectors
  - Fulfilling requirements is difficult without guidance
    - *Senior/Experienced scientist must instruct next generation of scientists with practical filling of metadata templates (excel or paper) during a field experiment (research school)*
    - *regular science course or as part of PhD program*
- Recognition
  - Data should count more when people are evaluated for projects/fundings
    - *Lobbying at the Research Council*
- Funding is often underestimated
  - Too many hours are spent due to lack of preparation and/or misunderstanding of roles
    - *Dedicated Curation Calls*
    - *Influence funding agencies to increase funding for research projects: more funding for extensive data collection*



# Main points (2)

- Level of requirements
  - Finding an appropriate level of requirements for metadata publication to keep them interoperable but not too challenging to achieve.
- Uncertainties on how to prepare data
  - Good netCDF example for common data types: filled attributes, controlled vocabularies etc...
  - Promoting better existing templates (Nansen Legacy, INTAROS, CMEMS) and sample software (Rosetta, Python scripts)
- Toolings
  - Can be difficult to find relevant tools, e.g. new tools that are not part of big organisations or projects that can promote them widely
    - *Catalogue of tools (with links to software)*





# Main points (3)

- Data collector
  - Gather use/site metadata during field experiment, processing data, quality control
- Data manager
  - Provide support for discovery metadata
  - Specifying what metadata are needed, what vocabs to use
  - Clear information for data type & have a good netCDF example of datasets
  - Good feedback and guidelines for creating netCDF files
- Data center
  - Expect dissemination & citation tracking
  - Ensure visibility of datasets.
  - Ideally requiring / quality controlling sufficient metadata for compliance
  - Long-term data preservation & DOI provision
- Data consumer
  - Proper attribution and following the licence
  - Suggest future collaboration

