

The Year of Polar Prediction (YOPP)

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World Meteorological Organization

Organisation météorologique mondiale

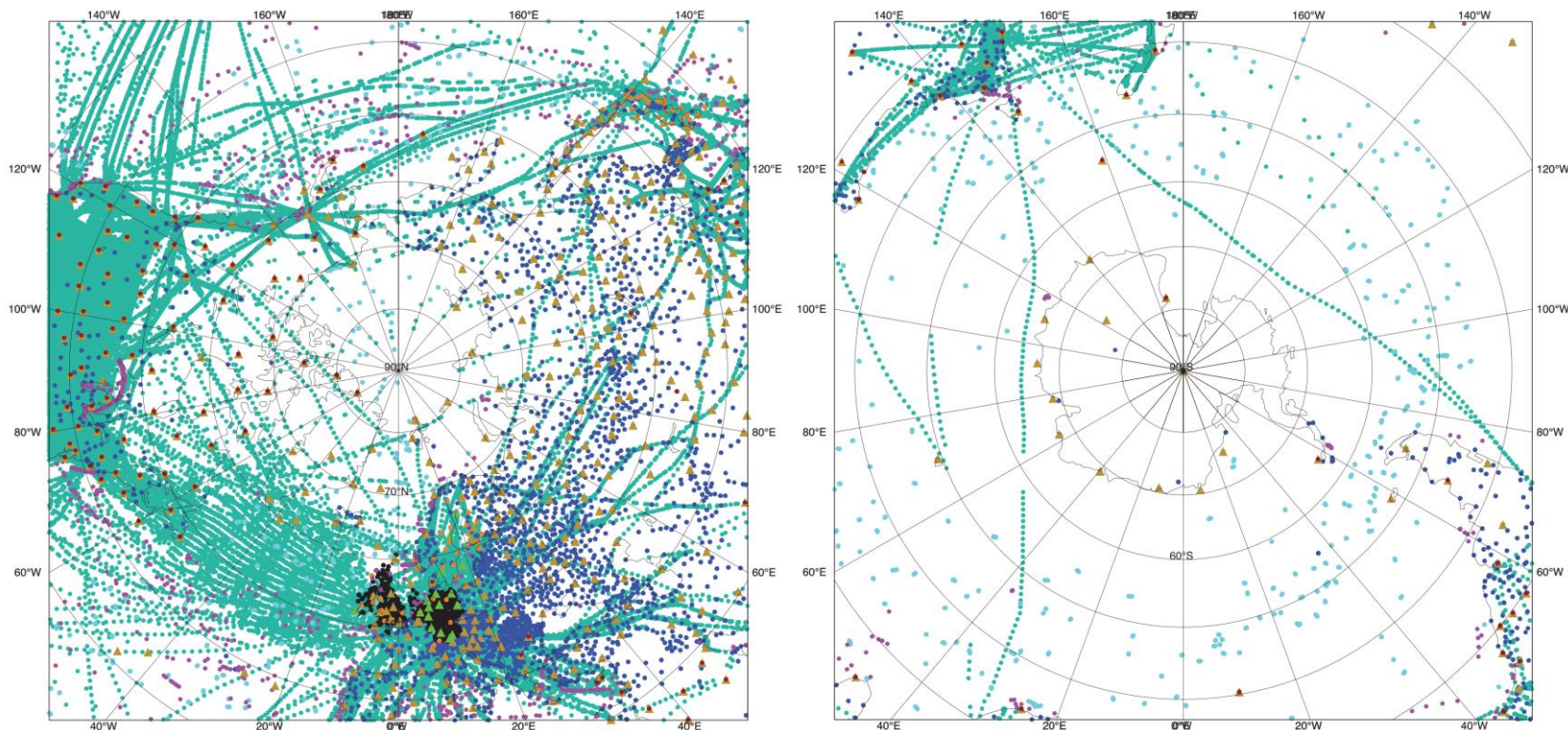
WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

Opportunities and Risks



Arctic and Antarctic Observations

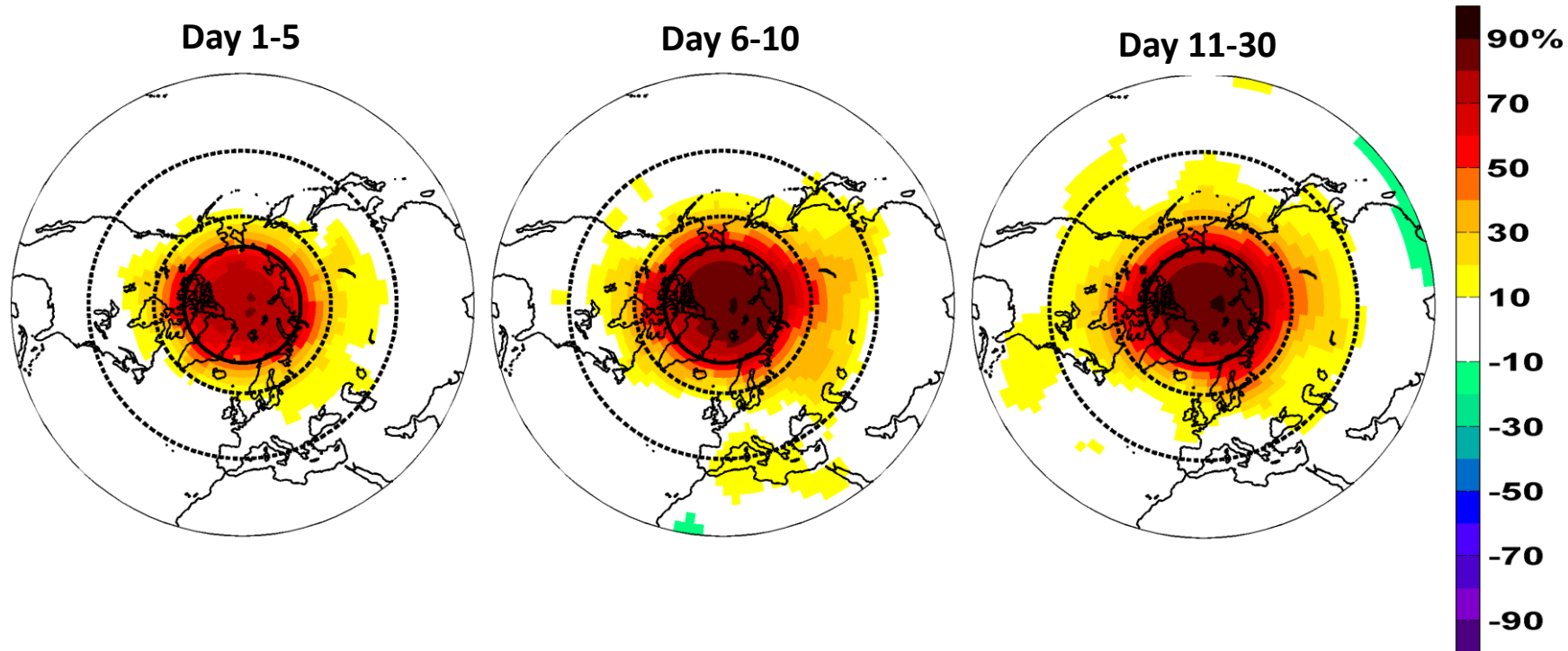
• SYNOP • SHIP • PILOT ▲ TEMP ▲ TEMP_B • PROF ◆ METAR • AIRCRAFT DRIBU • SYNOP_B



Conventional observations that were assimilated by the operational forecasting system at ECMWF on 15 April 2015.

Linkages to lower latitudes

Implications for predictions in lower latitudes



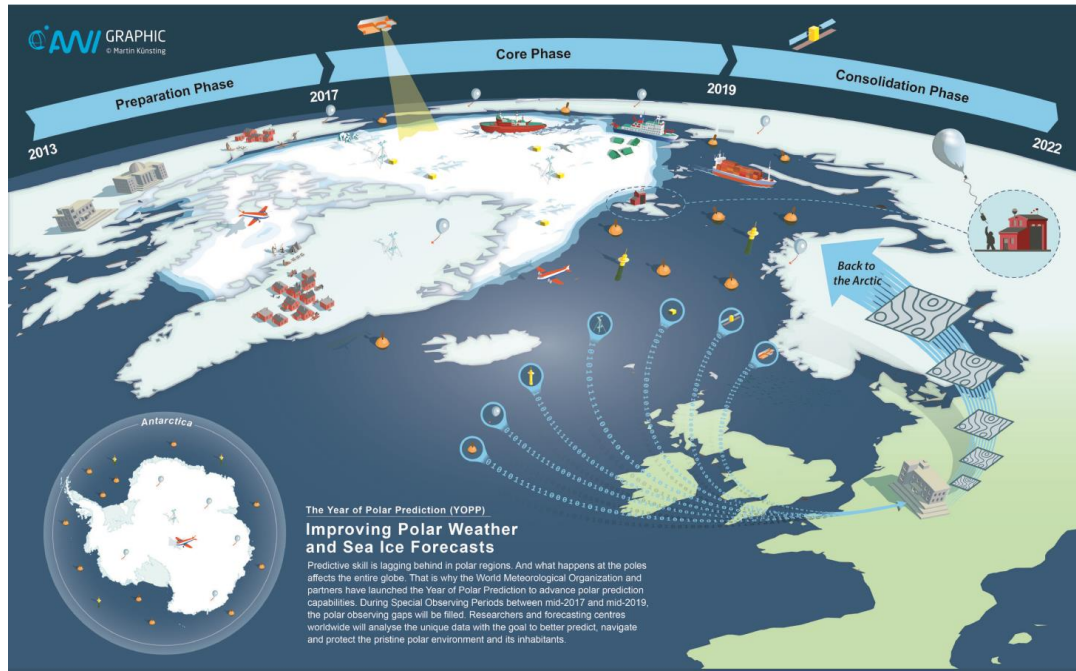
Jung et al. (2014), Geophys. Res. Lett.



WMO OMM

Pan-WCRP working groups meeting
UK Met Office, Exeter, UK, 9-13 October 2017

Year of Polar Prediction (YOPP)



Mission statement:

Enable a significant improvement in environmental prediction capabilities for the polar regions and beyond, by coordinating a period of intensive observing, modelling, prediction, verification, user-engagement and education activities.

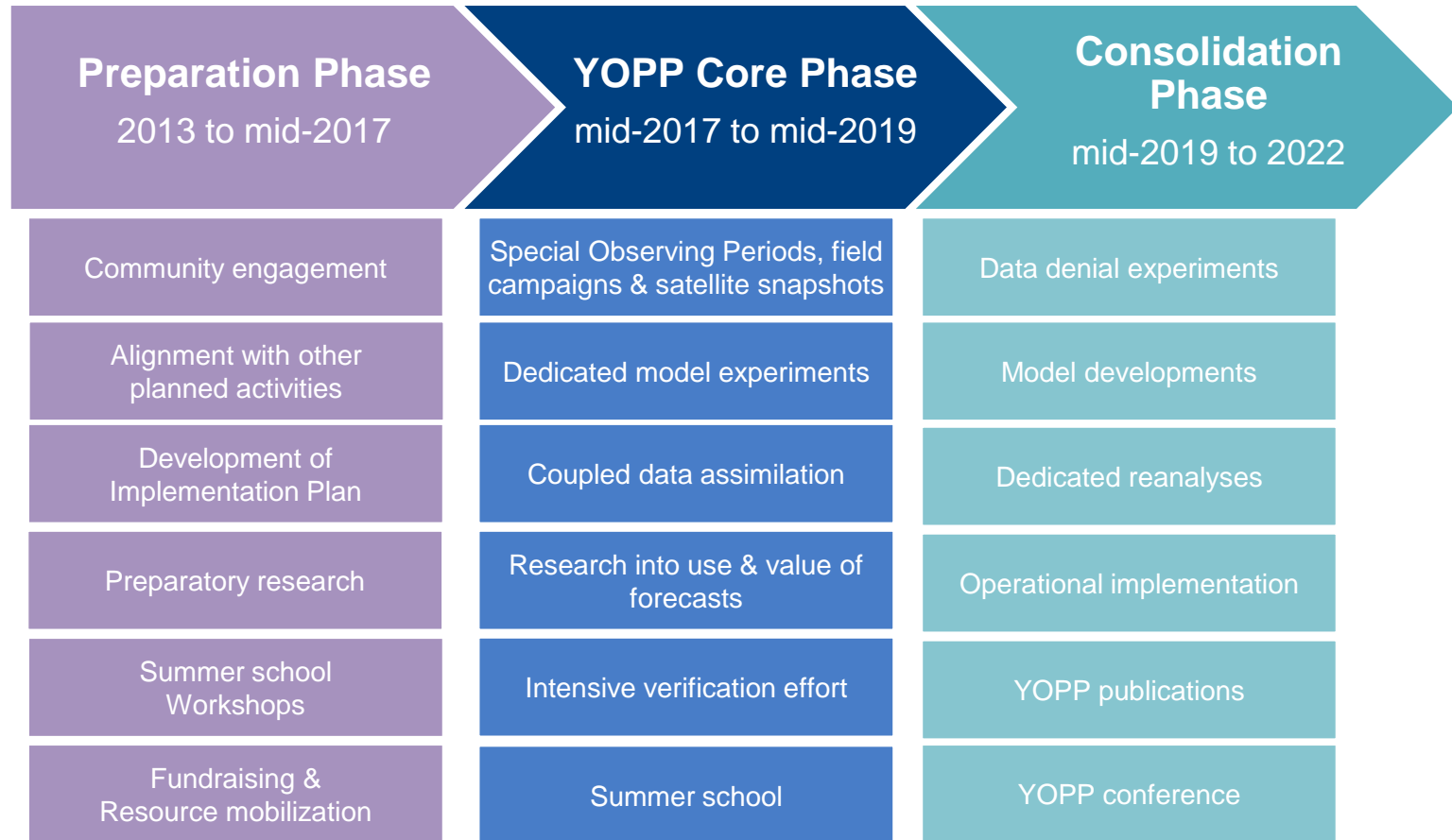


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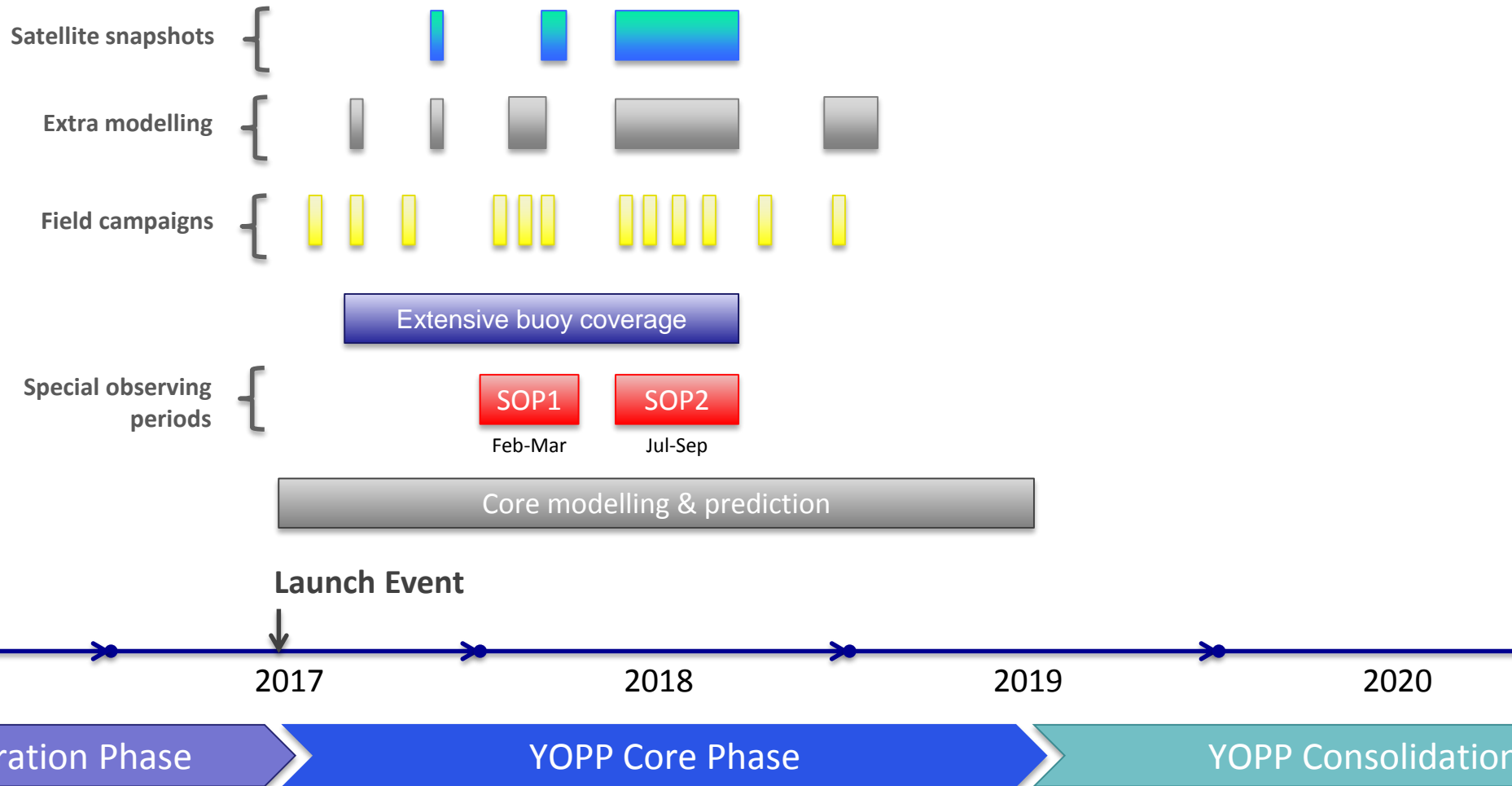
www.polarprediction.net
[@polarprediction](https://twitter.com/polarprediction)

YOPP Time Line

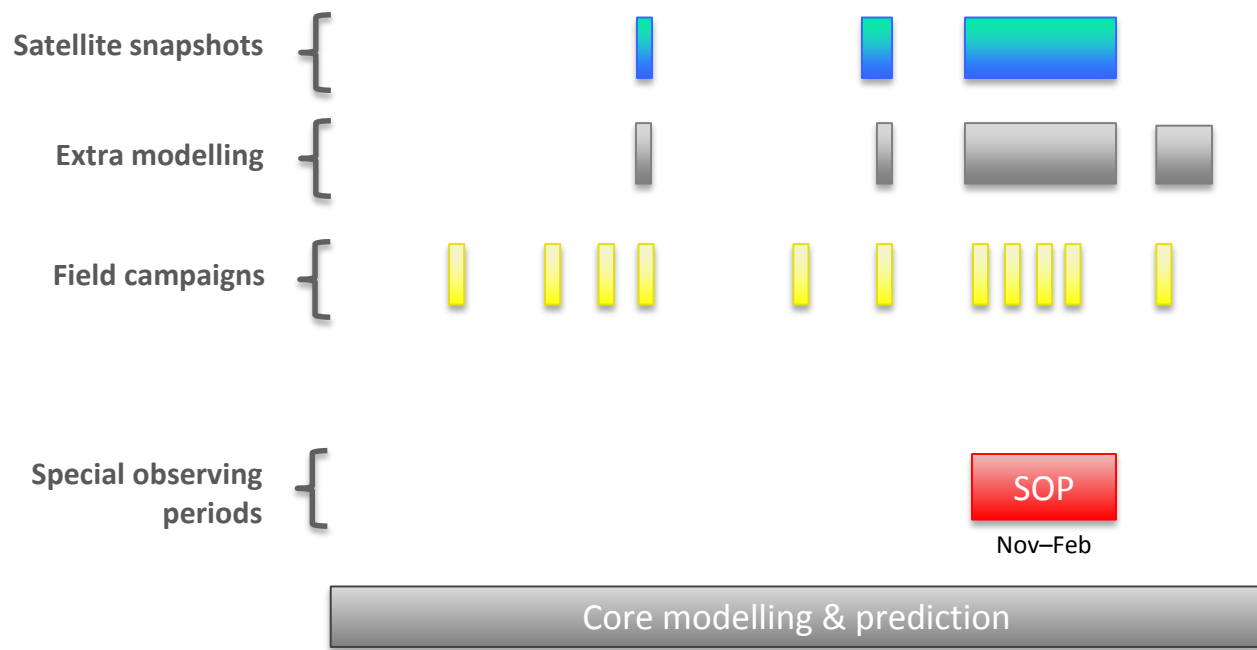


Jung et al. (2016), Bull. Amer. Meteor. Soc.

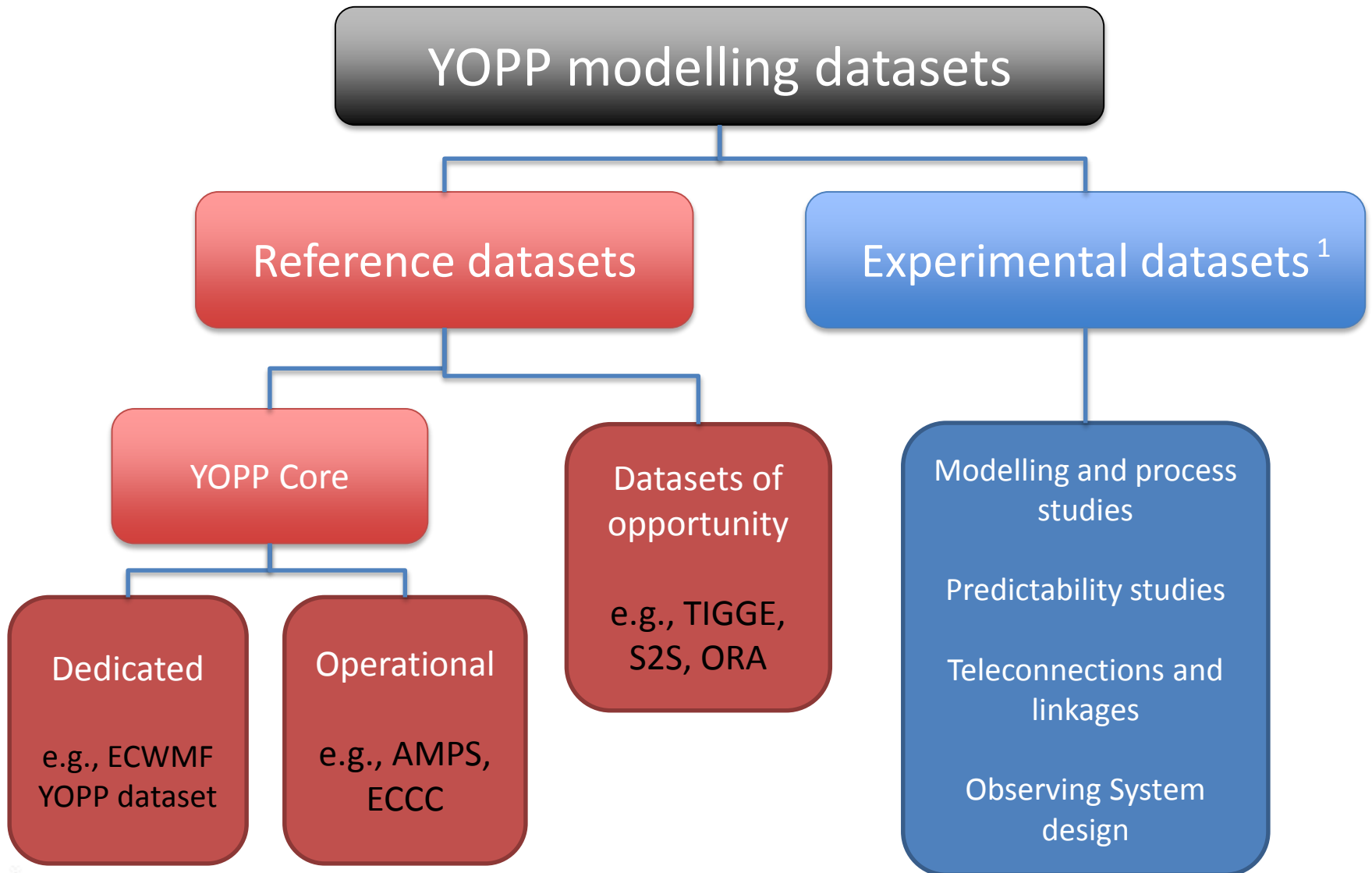
YOPP Core Phase in the Arctic



YOPP Core Phase in Antarctica



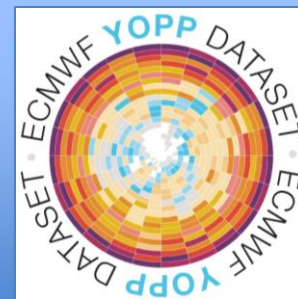
YOPP Modelling Component



(Selected) YOPP Core Datasets

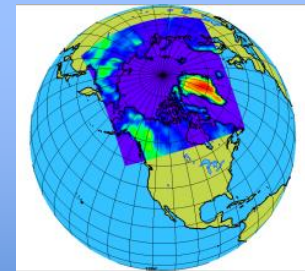
ECMWF YOPP dataset

- EPS control forecasts (18 km)
- Coupled model from autumn (9 km)
- Process tendencies will be provided
- <http://apps.ecmwf.int/datasets/data/yopp/>



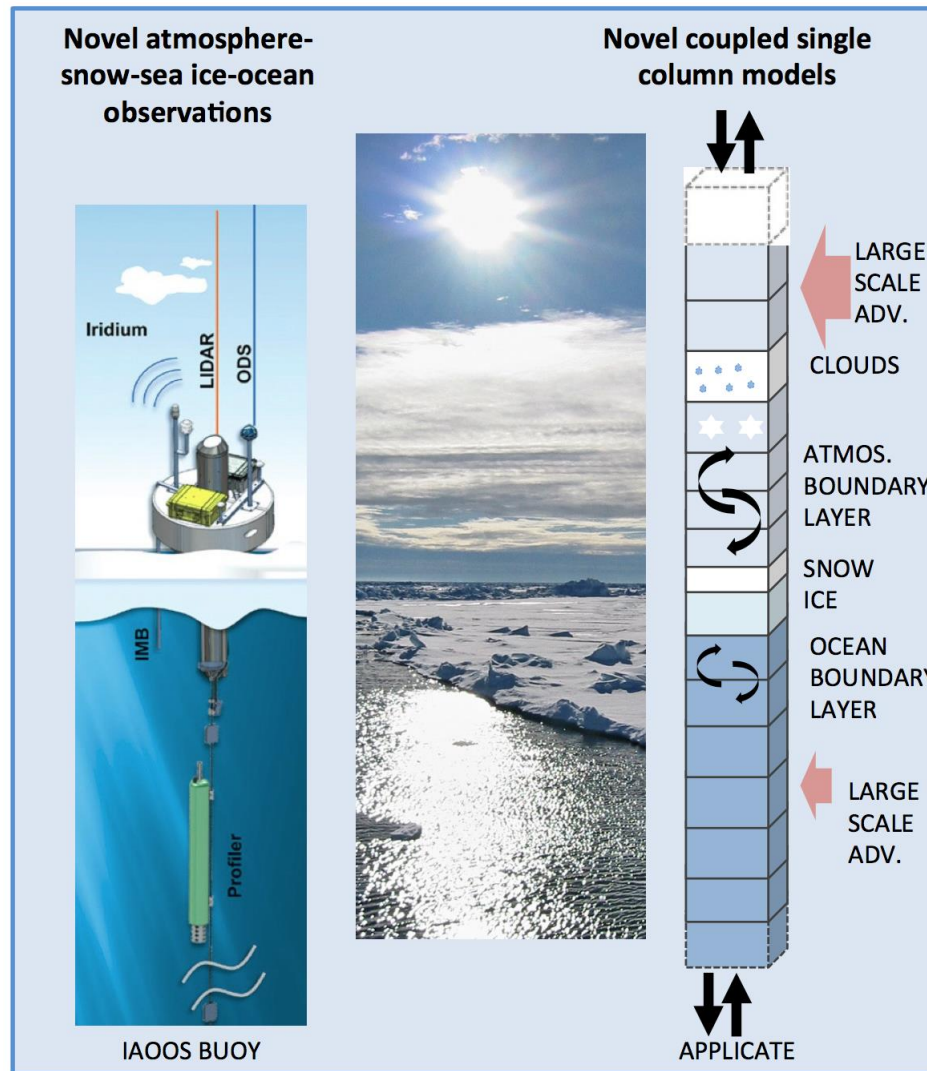
ECCC YOPP datasets

- CAPS-RIOPS (A:2.5 km, IO: 3-8 km, 2 days)
- GDPS-GIOPS (A: 25km, IO: 1/4°, 10 days)
- GIOPS ensemble (32 days, 20 members)
- Seasonal predictions (1°, 20 members)
- Available through World Mapping Service (WMS)



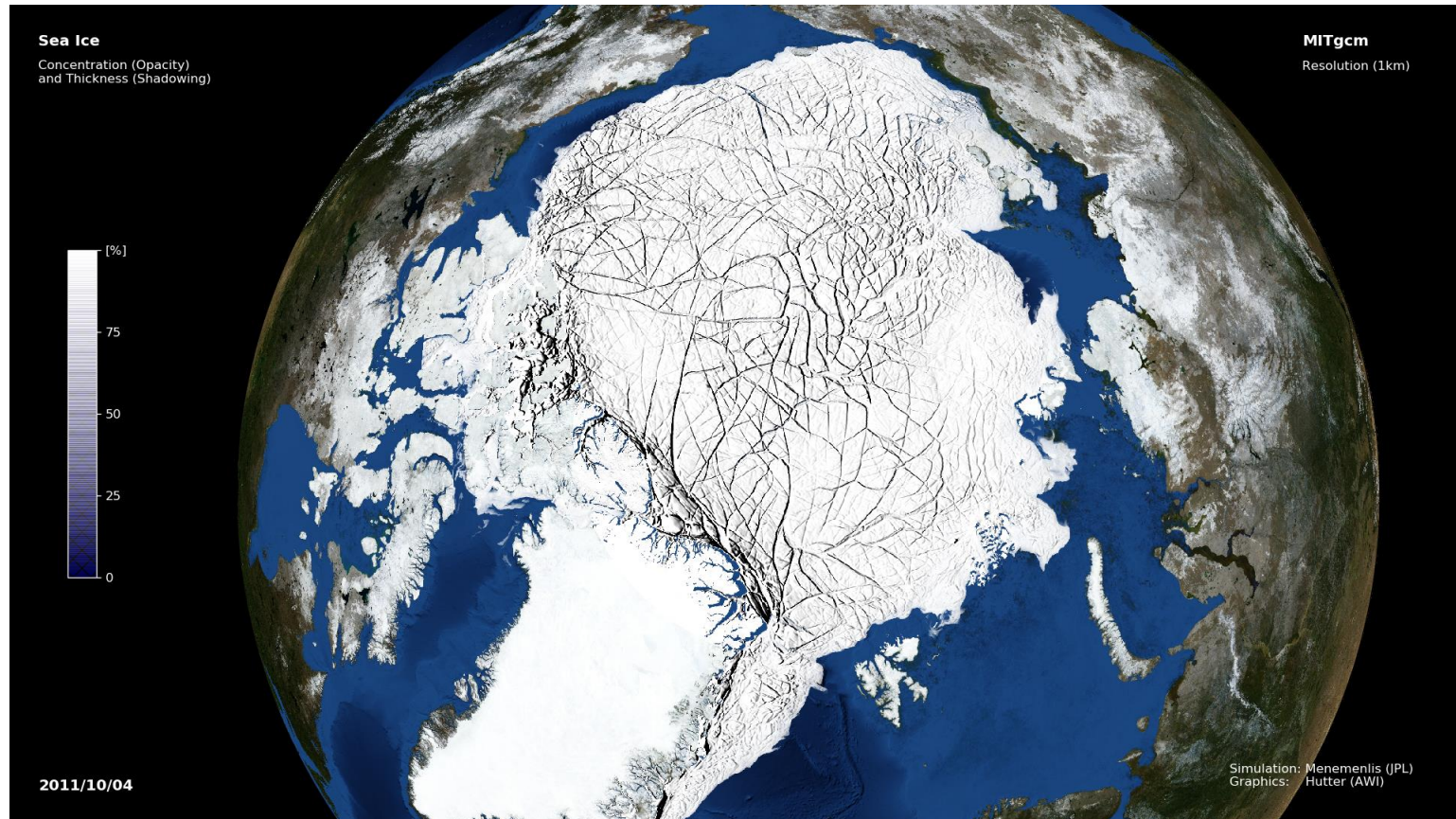
(Selected) YOPP Experimental Datasets

Coupled single column modelling



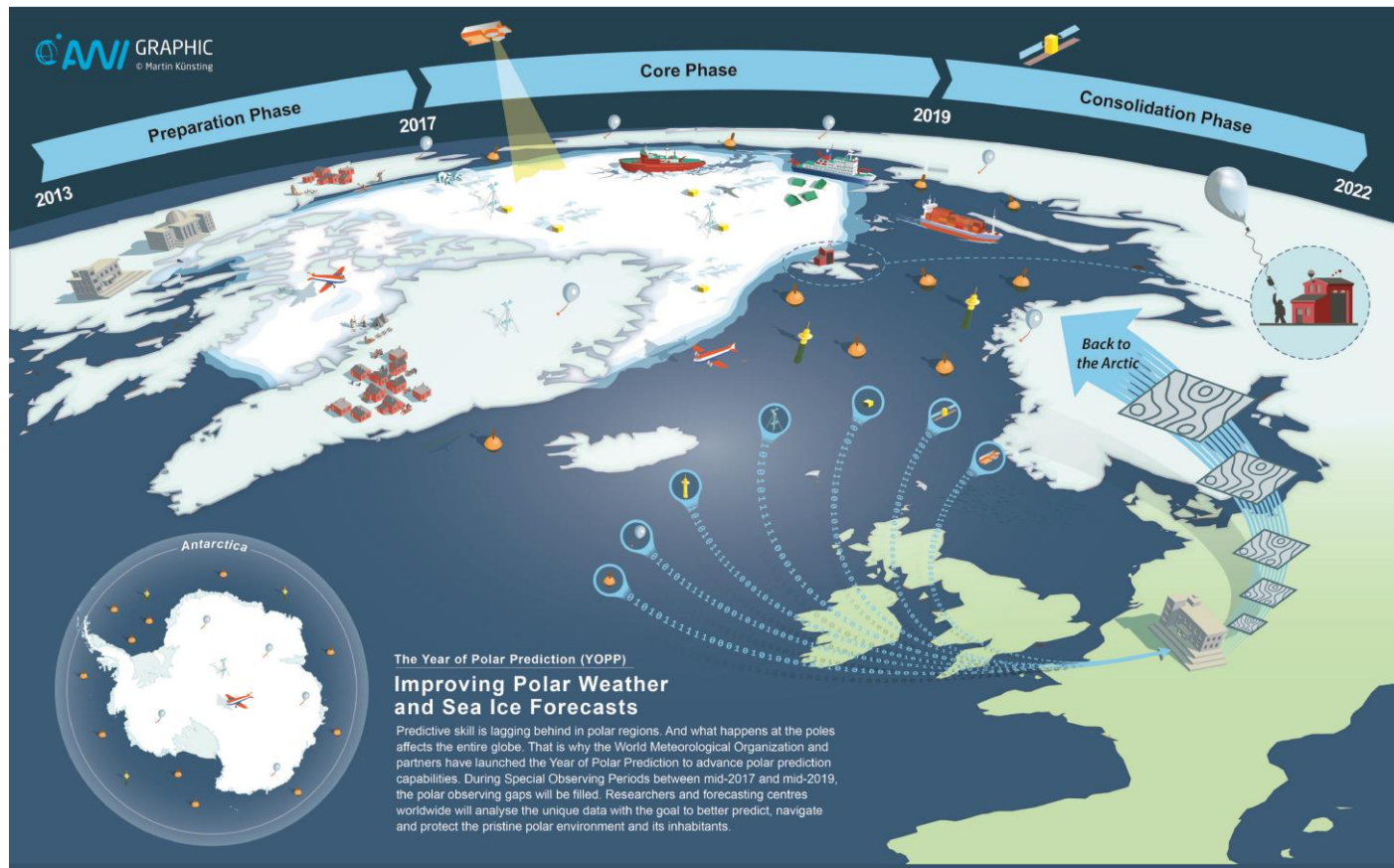
(Selected) YOPP Experimental Datasets

High-resolution sea ice-ocean modelling

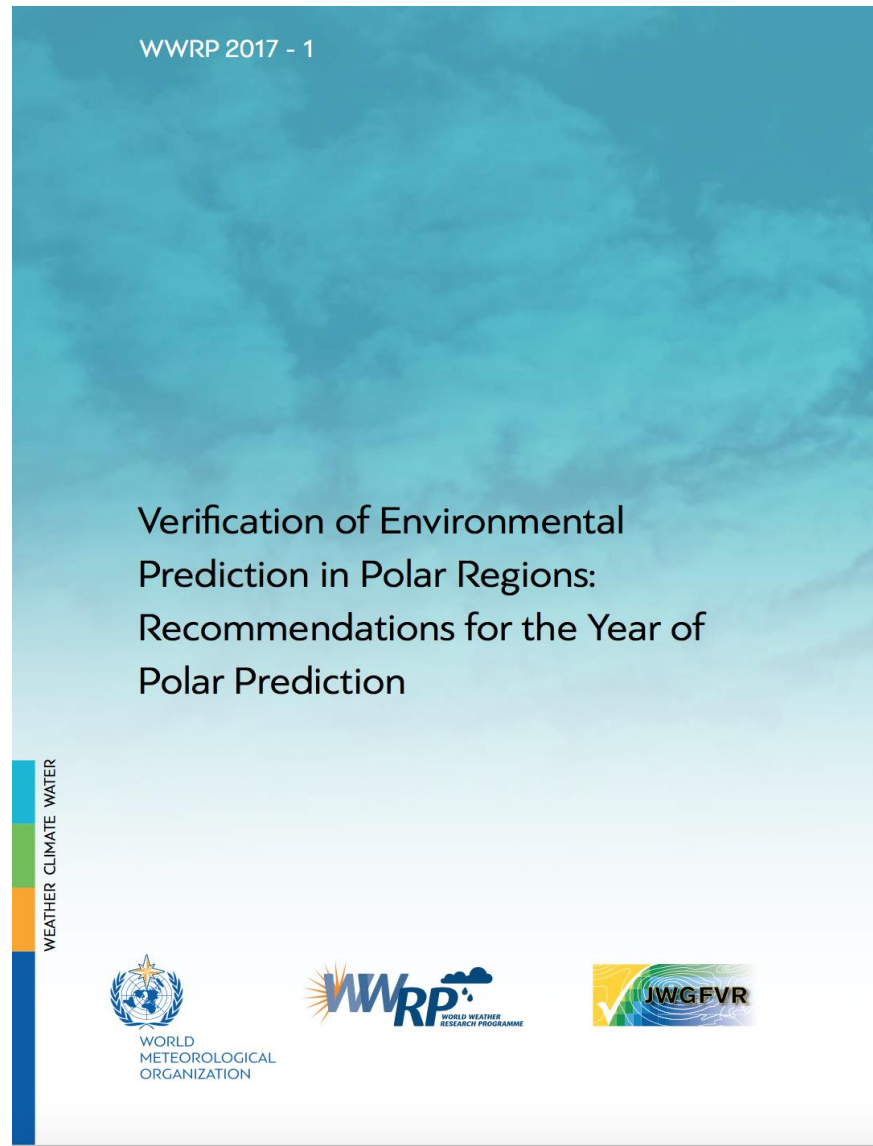


(Selected) YOPP Experimental Datasets

Data denial experiments for Special Observing Periods



YOPP Verification



High-resolution model output @ YOPP Supersites

- Provide high-resolution model data at selected supersites
- Thorough model evaluation and verification
- List of sites available in YOPP Modelling Plan
 - Criteria: Location, extra observations etc.
- Period
 - Ideally mid-2017 to mid-2019 or
 - Special Observing Periods in both hemispheres
- Points of contact: Barbara Casati and Gunilla Svensson

Summary

- YOPP core period has started in May 2017
- First core model datasets are available (e.g. YOPP-ECMWF)
- Possible WGNE contributions
 - Data denial experiments for YOPP SOPs
 - Provision of high-resolution model output at supersites
 - Forecast verification
 - Consider active role in MOSAiC (Arctic drifting station)
 - ...

Polar Prediction Project Steering Group Meeting #8 and Year of Polar Prediction Open Session

NOAA Center for Weather and Climate Prediction
College Park, Maryland (USA)
27 February – 01 March 2017



➤ Updates on PPP activities and review status of YOPP.



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