

# MOSAIC

*Multidisciplinary drifting Observatory  
for the Study of Arctic Climate*

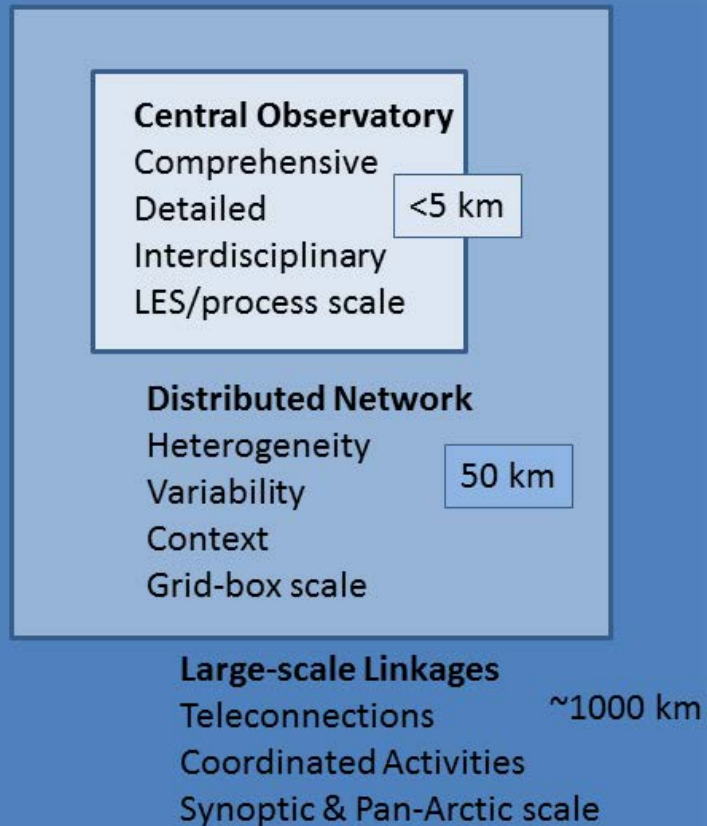
## *Science Plan Writing Team*

*Matthew Shupe, David Barber,  
Klaus Dethloff, Sebastian Gerland,  
Jun Inoue, Craig Lee, Brice Loose,  
Alexander Makshtas, Wieslaw Maslowski,  
Marcel Nicolaus, Dirk Notz, Ilka Peeken,  
Don Perovich, Ola Persson, Julia Schmale,  
Michael Tjernström, Timo Vihma,  
Jinping Zhao*

[www.mosaicobservatory.org](http://www.mosaicobservatory.org)



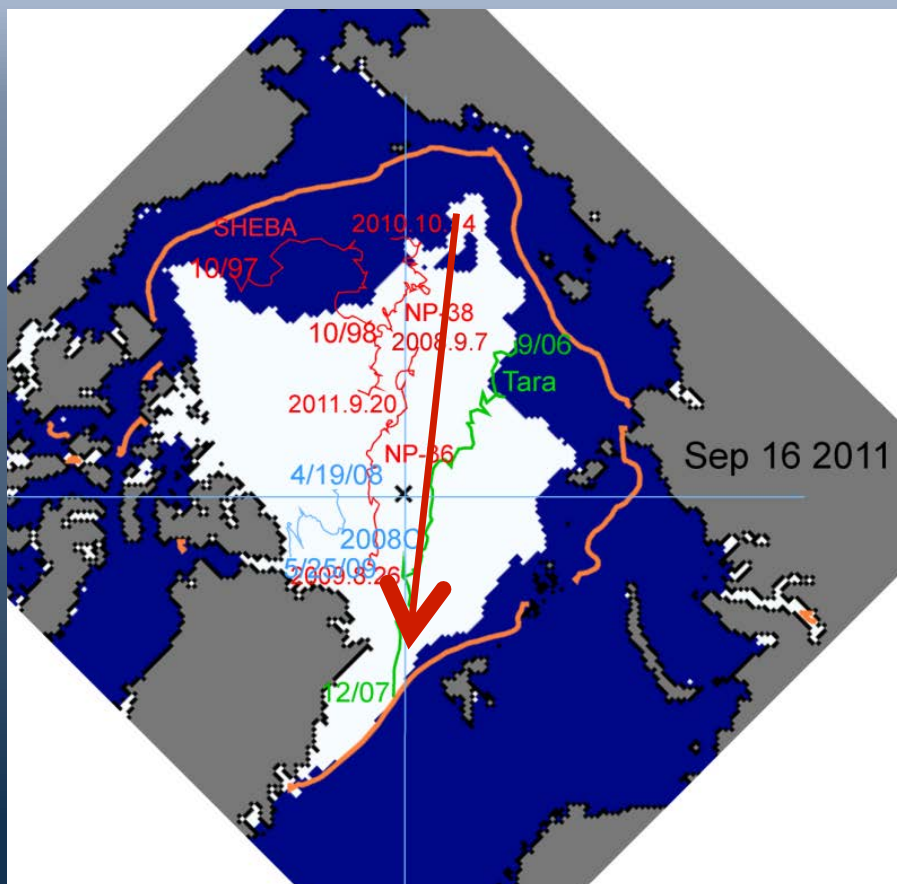
# The MOSAiC Concept



**Detailed process study to understand coupled central Arctic climate system**

- 1) **Central observatory on an ship – atmosphere-ice-ocean-BGC**
- 2) **Distributed observation network – Grid-box scale**
- 3) **Coordinated modeling activities – Multi-scale**

# The MOSAiC Concept



September 2011 sea ice extent (courtesy NSIDC). Numerous drift tracks of stations suggest possible observatory tracks

**Timeframe:**

**2018-2019 annual cycle**

**Location:**

**Central Arctic Basin ice pack  
Targeting 1<sup>st</sup>-year sea ice**

***Coupled, Sea Ice System***  
**Science Themes**

**Sea-ice Energy Budget**  
**Ice Motion / Deformation**  
**Clouds / Precip / Aerosols**  
**BioGeoChem Processes**  
**Large-scale implications**

# MOSAiC >> YOPP

Observational “test bed”:

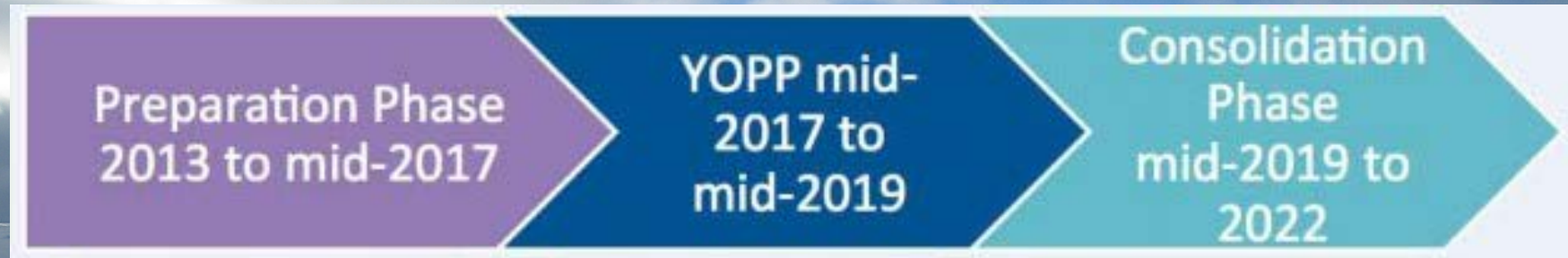
1) Detailed column observations >>  
Process understanding

2) Spatial measurements >>  
Gridbox representation

Archive of observational products



# YOPP >> MOSAiC



- Coordinated work towards building community support
- Draw for other enhanced observations
- Developing a model community that is eager to use obs
- Preparatory & Operational model support
- Archival of enhanced modeling products
- Data sets appropriate for model forcing
- Being the conduit for linking MOSAiC to large-scale