

***Tuesday, October 19***

***AOMIP School for young scientists***

***Carriage House***

**8:00 8:15 Coffee**

**8:15 8:30 Mike Steele and Andrey Proshutinsky:** Introduction (welcome, AOMIP workshop school major goals and tasks, school agenda)

**8:30 9:10 Jennifer Hutchings** (International Arctic Research Center, IARC): Sea Ice Dynamics Overview: What role do ice dynamics play in a changing Arctic?

**9:10 9:20 Questions, discussions**

**9:20 10:00 Mary-Louise Timmermans:** (Yale University, USA): Dynamics in the deep Arctic Ocean

**10:00 10:10 Questions, discussions**

**10:10 10:30 Coffee break**

**10:30 11:10 Xiangdong Zhang** (International Arctic Research Center, IARC): Atmospheric Reanalysis Data: Detection, Attribution, and Application in Arctic Climate Change Studies

**11:10 11:20 Questions, discussions**

**11:20 12:00 Jamie Morison** (Polar Science Center, University of Washington, UW): Observations of Interannual Variability of Arctic Ocean Circulation: Water Samples to Satellites

**12:00 12:10 Questions, discussions**

**12:10 13:00 Lunch**

**13:00 14:30 WHOI tour**

**14:30 15:10 David Holland** (New York University, NYU): A review of ice sheet - ocean interactions: Observations and modeling

**15:10 15:20 Questions, discussions**

**15:20 15:40 Coffee break**

**15:40 16:20 Rebecca Woodgate** (Polar Science Center, University of Washington, UW): Getting around in the Arctic - what we do (and don't) know about boundary currents

**16:20 16:30 Questions, discussions**

**18:00 21:30 Martha Vineyard Island trip:** (Weather permitting)

***Wednesday, October 20***

***Clark Building, Room 507***

**8:30 8:45** Andrey Proshutinsky: Introduction (welcome and workshop major goals and tasks)

**SESSION 1: Arctic Ocean state and variability** (Conveners: Michael Karcher and Patrick Heimbach)

**08:45 – 09:00** Karcher, Michael (OASYS, Germany): First results of a state estimation of the Arctic and sub-Arctic Ocean during the IPY years

**09:00 – 09:15** Su, Jie (Ocean University of China, China): Climatology of the Arctic Ocean based on NEMO results

**09:15 – 09:30** Heimbach, Patrick (MIT, USA): Arctic Ocean state and sensitivity calculations for AON

**09:45 – 10:00** Panteleev, Gleb (IARC, USA): Reanalysis of the Arctic Ocean circulation and adjoint sensitivity analysis of the velocity observations

**10:00 – 10:15** Carton, Jim (University of Maryland, USA): Decadal Variations of upper ocean water properties in the Greenland Sea/Barents Sea areas

**10:15 – 10:30 Coffee break**

**10:30 – 11:00 Discussion:** Arctic Ocean state and variability – new directions of research (Moderators: Michael Karcher and Partrick Heimbach)

**SESSION 2: Sea ice and ice-related modeling and observing (Conveners: Mark Johnson and Jennifer Hutchings)**

**11:00 – 11:15** Dansereau, Veronique (WHOI, USA): Are sea ice model parameters independent of convergence and resolution?

**11:15 – 11:30** Spreen, Gunnar (Caltech, USA): Arctic Sea Ice Deformation in Satellite Remote Sensing Data and in a Coupled Sea Ice-Ocean Model

**11:30 – 11:45** Johnson, Mark (UAF, USA): Validation of sea ice thickness simulations using satellite, ULS and Air-based electromagnetic observations

**11:45 – 12:00** Lemieux, Jean-Francois (McGill, Canada): Combining the VP and EVP models to solve the sea ice momentum equation

**12:00– 13:30 Lunch**

**13:30 – 13:45** Laxon, Seymour (University London College, UK): CryoSat updates

**13:45 – 14:30 Discussion:** Sea ice and ice-related modeling and observing (Moderators: Mark Johnson and Jennifer Hutchings)

**SESSION 3: Fresh water fluxes, transformations and trends** (Conveners: Jahn Alexandra and Alan Condron)

**14:30 – 14:45** Gerdes, Ruediger (AWI, Germany), Sarah Nau (University Tübingen, Germany), and Frank Kauker (AWI, Germany): Trends in sea ice drift and the Arctic Ocean fresh water balance

**14:45 – 15:00** Jahn, Alexandra (NCAR, USA): Comparison of the Arctic FW budget and FW export variability simulated from different models

**15:00 – 15:15** Condron, Alan (University of Massachusetts, Amherst, USA): The arctic freshwater budget in response to extreme NAO forcing

**15:15 – 15:30** Herbaut C. and M.-N. Houssais (LOCEAN, France): Simulated variability of the fresh water content in the western Arctic

**15:30 – 15:45 Coffee break**

**15:45 – 16:00** Platov Gennady, Elena Golubeva and Victor Kuzin (Institute of Computational Mathematics and Mathematical Geophysics, Russia): The influence of the inter-annual variability of Siberian rivers run-off on the redistribution of the fresh water fluxes in the Arctic Ocean and North Atlantic

**16:15 – 16:30** Langehaug, Helene (NERSC, Norway): Sources and sinks for the heat- and freshwater budget in the Arctic Mediterranean via exchanges at the Greenland-Scotland Ridge (within the Bergen Climate Model)

**16:30 – 16:45** Proshutinsky, Andrey (WHOI, USA): Freshwater transformations in the Beaufort Gyre and model intercomparison results

**16:45 – 17:30 Discussion:** Fresh water fluxes, transformations and trends (Moderators: Jahn Alexandra and Alan Condron)

**17:30 – 19:00 Reception, Clark 507**

***Thursday, October 21***

**Clark Building, Room 507**

**SESSION 4: Arctic Ocean circulation, exchanges and effects** (Conveners: Ruediger Gerdes and Andrey Proshutinsky)

**08:15 – 08:30** Aksenov, Yevgeny (National Oceanography Centre Southampton, UK), Beverly de Cuevas, Ruediger Gerdes, Michael Karcher, Andrey Proshutinsky, An T. Nguyen, Eji Watanabe and Martin Wadley: Tracing Pacific Water in the Arctic: AOMIP model experiments.

**08:30 – 08:45** Aksenov, Yevgeny (National Oceanography Centre Southampton, UK), Vladimir Ivanov, George Nurser, Sheldon Bacon, Igor Polyakov, Andrew Coward and Alberto Naveira-Garabato: The Arctic Circumpolar Boundary Current: from modeling and observational perspective

**08:45 – 09:00** Kiney, Jacklyn Clement (NPS, USA): Toward improved understanding of mass and property fluxes through Bering Strait

**09:00 – 09:15** Holloway, Greg (IOS, Canada): Over 10,000 years of current meters data for models testing

**09:15 – 09:30** Hannah, Charles, Y. Lu (DFO, Canada): Circulation in the Canadian Arctic simulated with a two-way nested ice-ocean model

**09:30 – 09:45** Pickart, Robert and Mike Spall (WHOI, USA): Shelf – Basin exchange processes based on observational data and model results: Case study for the Beaufort and Chukchi Seas

**09:45 – 10:00** Watanabe, Eiji (IARC) and An T. Nguyen (JPL): Wind-driven halocline variability in the western Arctic Ocean

**10:00 – 10:15 Coffee break**

**10:15 – 10:30** Qiang Wang et al. (University of Alberta, Canada): Numerical Simulation of the Circulation and Sea-Ice in the Canadian Arctic Archipelago

**10:30 – 11:15 Discussion:** Arctic Ocean circulation, exchanges and effects (Moderators: Ruediger Gerdes and Andrey Proshutinsky)

**SESSION 5: Models, model performance and observations** (Conveners: An Nguyen and Greg Holloway)

**11:15 – 11:30** Bacon, Sheldon (National Oceanography Centre Southampton, UK): Some model results from Arctic consortium (ASBO) climate model

**11:30 – 11:45** Chen, Chengsheng UMASDD, USA): AO-FVCOM Development: A System Nested with Global Ocean Models

**11:45 – 12:00** Koldunov, Nikolay (Hamburg University, Germany): Intercomparison of model runs with three different resolutions in the Arctic Ocean

**12:00 – 13:00 Lunch**

**13:00 – 13:15** Dukhovskoy, Dmitry, (FSU, USA), Eric Chassignet, Joe Metzger, Pam Posery, Alan Wallcraft: The Impact of Topography Representation on Mesoscale Circulation in the Arctic Ocean-Sea Ice Model ARCC0.72

**13:15 – 13:30** Giles, Katherine (University College London, UK): Time-variant sea surface topography from Radar Altimetry

**13:30 – 13:45** Peralta-Ferriz, Cecilia (UW, USA): A new mode of sub-monthly variability in Arctic Ocean bottom pressure

**13:45 – 14:00** Nguyen, An T. (UCLA/JPL), Zeliang Wang, Camille Lique, and Greg Holloway, "Measuring skill of the Arctic Ocean models in temperature-salinity space".

**14:00 – 14:15** Haine, Thomas (JHU, USA ): Denmark Strait Transport Fluctuations from Altimetry?

**14:15 – 15:00 Discussion:** Models, model performance and observations (Moderators: An Nguyen and Greg Holloway)

**15:00 – 15:15 Coffee break**

**SESSION 6: Biogeochemistry and ecosystem modeling** (Conveners: Mike Steele and Katya Popova)

**15:15 – 15:30** Deal, Clara (International Arctic Research Center, UAF, USA): Biogeochemistry in LANL model

**15:30 – 15:45** Greene, Charles (Cornell University, USA): Arctic Remote Forcing of NW Atlantic Shelf Ecosystems

**15:45 – 16:00** Steele, Mike (UW, USA): The seasonal cycle of mixed layer depth in observations and models

**16:00 – 16:15** Popova, Katya (National Oceanography Centre Southampton, UK): Plankton productivity in four coupled physical and biological models of the Arctic Ocean: does ice rule them all?

**16:15 – 16:30** Yakushev, Evgeniy (NIVA, Oslo, Norway): On modeling of biogeochemical processes in oxygen-deficient and anoxic conditions

**16:30 – 17:15 Discussion:** Biogeochemistry and ecosystem modeling (Moderators: Mike Steele and Katya Popova)

**18:30 Working project dinner at local restaurant**

***Friday, October 22***

***Clark Building, Room 509***

**08:15 – 08:30 Coordinated experiments (Andrey Proshutinsky)**

**08:30 – 11:00 Coordinated experiments (group meetings in conference rooms: Clark 507, Clark 509, Clark 428 and Clark 331) Coffee break: 10:00 – 10:15**

**11:00 – 12:00 Coordinated experiments (group reports)**

**12:00 – 12:30 Workshop adjourn and final remarks**

**SESSION 7: POSTERS (will be displayed all time during workshop)**

1. Aksenov, Y. and A. Coward (National Oceanography Centre Southampton, UK): Preliminary results from a global model with eddy-resolving capability in the Arctic.
2. Arjen D. Terwisscha van Scheltinga, Paul G. Myers and Julie D. Pietrzak (University of Alberta): Modeling ice transports through the Canadian Arctic Archipelago
3. Benyahya Loubna, Philippe Gachon, René Laprise, André St-Hilaire, Taha B.M.J. Ouarda (Université du Québec à Montréal, Canada): Spatial interpolation of daily precipitation data: case study of southern Québec (Canada)
4. Bourgain, Pascaline (Universite Pierre et Marie Curie, France): The Arctic Ocean variability over the last 12 years
5. Francis, Oceana (IARC, USA): Validation of significant wave heights of the Wave Model WAM using a Recording Doppler Current Profiler
6. Francis, Oceana, Gleb Panteleev and David Atkinson (IARC, USA): Towards accurate monitoring of currents in the southeast Chukchi Sea region of Alaska
7. Gerdes, Ruediger and Polona Rozman (AWI, Germany): Spreading of river run-off in NAOSIM and the effect of land-fast ice

8. Golubeva Elena, Gennady Platov and Victor Kuzin (Institute of Computational Mathematics and Mathematical Geophysics, Russia) Arctic Ocean circulation: intercomparison of terrain following and z-level model results.
9. Hebert, David and Pamela Posey and Richard Allard and Steve Piacsek (All NRLSSC). Arctic Cap Nowcast/Forecast System (ACNFS): Validation from Satellite, Airborne, ULS, and Ice Mass Balance Data.
10. Hu, Xianmin, Paul G. Myers, Qiang Wang (University of Alberta, Canada): Freshwater Outflows through the Canadian Arctic Archipelago from a Pan-Arctic Numerical Model
11. Hutchings Jennifer, A. Roberts, C. Geiger, J. Richter-Menge, M. Thomas and C. Kambhamettu (all USA): Temporal and spatial characterization of sea ice deformation
12. Jin, Meibing (IARC, UAF): Assessing ocean mixing under sea ice and lead in climate models
13. Lukovich, Jennifer V., David Babb, and David G. Barber (Centre for Earth Observation Science (CEOS), University of Manitoba, Canada): Ice beacon trajectories in the Arctic during the Circumpolar Flaw Lead (CFL) study.
14. Luneva, Maria (National Oceanographic Centre Liverpool, UK): Rossby waves on a polar plane and the effects of bathymetry on the geostrophic adjustment in an Arctic Ocean model
15. Luneva, Maria (National Oceanographic Centre Liverpool, UK): NOCL development of a NEMO-shelf Arctic Ocean model
16. Malakhova V. and Elena Golubeva (Institute of Computational Mathematics and Mathematical Geophysics, Russia): Anomalies of dissolved methane in the Arctic waters according to the observed data and results of numerical modeling
17. Mårtensson, Sebastian (Department of Meteorology, Stockholm University, Sweden): Ridged ice trends and time series as simulated by a multi-category sea ice model
18. McGeehan, Timothy (NPR, USA): Seasonal and Interannual Ocean Exchanges through the Canadian Arctic Archipelago - Evaluation of High-Resolution Model Results
19. Niederdrenk, Laura (MPI-Hampurg, Germany): The Arctic hydrologic cycle and its variability
20. Osinski, R. (Institute of Oceanology, Polish Academy of Science, Poland) and W. Maslowski (NPS, USA): Measoscale features in the Chukchi and Beaufort Seas from an eddy-resolving pan-Arctic ice-ocean model.
21. Panteleev et al. (IARC, USA): Hindcast of the circulation in the Pacific sector of the Arctic Ocean and Bering Strait with a nested 4Dvar data assimilation system.

22. Prinsenberg Simon J. and Ingrid K. Peterson (Bedford Institute of Oceanography, Fisheries and Oceans Canada): Observing regional-scale pack ice decay processes with helicopter-borne sensors and moored Upward Looking Sonars
23. Provenzale, Antonello (Istituto di Scienze dell'Atmosfera e del Clima, Italy): Coherent vortices, vertical velocities and ecosystem productivity
24. Rampal, Pierre (MIT, USA): IPCC models strongly underestimate Arctic sea ice thinning and drift acceleration
25. Wang, Zeliang (DFO, Canada), Dan Wright (DFO, Canada), Greg Holloway (IOS, Canada), Charles Hannah (DFO, Canada): A model study of ice, heat, freshwater transports through Fram strait from 1958 to 2006 - Neptune effect
26. Yakushev, Evgeniy (NIVA, Oslo, Norway): Modeling of influence of organic matter production and destruction on the carbonate system seasonal changes in Arctic waters