

16th AOMIP and 1st FAMOS meetings

AGENDA

Tuesday, October 23, 2012

AOMIP School for young scientists

Clark Building, Room 507

8:30 8:45 Coffee

8:45 9:15 Mike Steele and Andrey Proshutinsky: Introduction (welcome, AOMIP workshop school major goals and tasks, school agenda)

9:15 9:55 Ursula Schauer (Alfred Wegener Institute, Germany): Atlantic Water in the Arctic Ocean – can we estimate the heat supplied through its inflow?

9:55 10:05 Questions, discussions

10:05 10:45 Sonya Legg (Princeton University, USA): The state of the art in understanding and modeling of ocean overflows and density currents

10:45 10:55 Questions, discussions

10:55 11:15 Coffee break

11:15 11:55 Vernon A. Squire (University of Otago Dunedin, New Zealand): Better Operational Forecasting for the Contemporary Arctic via Ocean Wave Integration

11:55 12:05 Questions, discussions

12:05 13:00 Lunch

13:00 14:00 “Outreach Fair” for demonstrations and exchange of ideas

14:00 14:40 Don Perovich (Cold Region Research and Engineering Laboratory, USA): Arctic sea ice mass balance and its future

14:40 14:50 Questions, discussions

14:50 15:30 Andrey Proshutinsky (Woods Hole Oceanographic Institution, USA): Large-scale Arctic atmospheric-ice-ocean circulation modes

15:30 15:40 Questions, discussions

15:40 16:00 Coffee break

16:00 16:40 Carin Ashjian (Woods Hole Oceanographic Institution, USA): The future of Arctic Marine Ecosystems

16:40 16:50 Questions, discussions

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

Wednesday, October 24, 2012

Clark Building, Room 507

8:45 9:00 Coffee

9:00 9:15 Andrey Proshutinsky: Introduction (welcome and workshop major goals and tasks)

SESSION 1: Sea ice highlights session (Conveners: Jackie Richter-Menge and Don Perovich)

09:15 – 09:30 Perovich Don (Donald.K.Perovich@usace.army.mil) CRREL, USA: “2012 sea ice conditions ”

09:30 – 09:45 Richter-Menge Jackie (Jacqueline.A.Richter-Menge@usace.army.mil), CRREL, USA: “Seasonal-to-Decadal Predictions of Arctic Sea Ice: Challenges and Strategies”

09:45 – 10:00 Allard Rick (Richard.Allard@nrlssc.navy.mil) NRL, USA: “NRL's September Sea Ice Extent Predictions for the 2012 Sea Ice Outlook”

10:00– 10:15 Schroeder David et al. (d.schroeder@ucl.ac.uk) University College London, UK: “Spatial and temporal evolution of melt pond area and depth based on Arctic sea ice simulations from 1990 to 2012”

10:15– 10:30 Smith Gregory (Gregory.Smith@ec.gc.ca) RPN-E, Environment Canada: “Evaluation of the CONCEPTS global ice-ocean prediction system”

10:30 – 10:45 Coffee break

10:45 – 11:00 West Alex (alex.west@metoffice.gov.uk) Met Office, Exeter, UK: *“Mechanisms causing reduced sea ice loss in a coupled climate model”*

11:00 – 12:00 Discussion: Fate of sea ice and its changes predictability (Moderators: Jackie Richter-Menge and Don Perovich)

12:00– 13:00 Lunch

SESSION 2: Sea ice observations and modeling (Conveners: Torge Martin and Andrew Roberts)

13:00 – 13:15 Hebert David (david.hebert@nrlssc.navy.mil, NRL, USA): *“Preliminary Evaluations of the Navy’s ACNFS versus NASA IceBridge Data”*

13:15 – 13:30 Feltham Daniel (d.feltham@ucl.ac.uk) University College London, UK): *“Anisotropic sea ice mechanics in climate models”*

13:30 – 13:45 Martin Torge (torge.martin@gmail.com) University of Washington, USA): *“Sea ice ridging: (un)constrained model parameters and impacts on the Arctic climate system”*

13:45 – 14:00 Lemieux Jean-Francois (lemieux@meteo.mcgill.ca) McGill University, Canada: *“Robustness and convergence properties of sea ice model implicit solvers”*

14:00 – 14:15 Tsamados Michel and Daniel Feltham (d.feltham@ucl.ac.uk) University College London, UK: *“Atmospheric and oceanic drag on sea ice”*

14:15 – 14:30 Roberts, Andrew (afrobert@nps.edu) Naval Postgraduate School, USA): *“Synthesis of ice-ocean dynamics statistics from observations and high-fidelity Earth System Models using wavelet techniques.”*

14:30 – 15:00 Discussion: Sea ice modeling and observing (Moderators: Torge Martin and Andrew Roberts)

15:00 – 15:15 Coffee break

SESSION 3: Arctic Ocean water properties and dynamics (Conveners: Mike Steele and Michael Karcher)

15:15 – 15:30 Golubeva Elena (elen@ommfao.sccc.ru) Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk, Russia): *“Simulation of the variability of the Atlantic Water circulation in the Arctic. Model sensitivity studies”*

15:30 – 15:45 Holloway Greg (Greg.Holloway@dfo-mpo.gc.ca) Institute of Ocean Sciences, Canada: *“California Currents of the Arctic Ocean”*

15:45 – 16:00 Carpenter Jeff (jeffrey.carpenter@yale.edu) Yale University, USA: *“Deep meso-scale eddies in the Canada Basin, Arctic Ocean”*

16:00– 16:15 Proshutinsky Andrey et al. (aproshutinsky@whoi.edu) WHOI, USA: Coordinated experiments to identify roles of different factors in the ocean dynamics and hydrography

16:15 – 16:30 Herbaut Christophe et al. (ch@locean-ipsl.upmc.fr) LOCEAN-IPSL, Université Pierre et Marie Curie, Paris, France): *“Dynamics of the Norwegian Atlantic Current from high resolution modeling and observations”*

16:30 – 16:45 Lu Youyu et al. (Youyu.Lu@dfo-mpo.gc.ca) Bedford Institute of Oceanography, Canada: *“Impacts of vertical momentum mixing on the simulation of Arctic circulation”*

16:45– 17:00 Wang Xuezhong (Xuezhong.Wang@awi.de) ,Alfred Wegener Institute, Germany) *“Representation of Atlantic Water in the Eastern Arctic in the Finite Element Sea-ice Ocean Coupled Model”*

17:00 – 17:30 Discussion: Causes of the Arctic Ocean hydrography and dynamics change (Moderators: Michael Karcher and Mike Steele)

17:30 – 19:15 Reception, Clark 507

Thursday, October 25, 2012

Clark Building, Room 507

8:30 – 8:45 Coffee

SESSION 4: Future Experiments

A. Freshwater and heat experiments (Conveners: Sheldon Bacon and Andrey Proshutinsky)

08:45 – 09:00 Sheldon Bacon (s.bacon@noc.ac.uk), Sinhue Torres-Valdes, Takamasa Tsubouchi, Alberto Naveira Garabato, NOC, Southampton, UK: *“Arctic ice and ocean heat and freshwater fluxes: an outline for a new AOMIP (or FAMOS) model intercomparison experiment”*

09:00 – 09:15 Proshutinsky Andrey and Dmitri Dukhovskoy: Freshwater fluxes from Greenland as a new regulator of climate regime changes in the Arctic-North Atlantic system

09:15 – 09:30 Cenedese Claudia (ccenedese@whoi.edu) WHOI, USA: *“Laboratory experiments investigating the influence of fjord circulation on outlet glacier melting”*

09:30 – 09:45 Karcher Michael (Michael.Karcher@awi.de) AWI, Germany: *“AOMIP/FAMOS – ASOF coordinated studies”*

09:45 – 10:00 Coffee break

B. Tracer based experiments (Conveners: Jim Ledwell and Alexandra Jahn)

10:00 – 10:15 Jahn Alexandra (ajahn@ucar.edu) UCAR, USA: *“Isotope enable Community Earth System Model”*

10:15 – 10:30 Ledwell Jim (jledwell@whoi.edu) WHOI, USA: *“Prospective Tracer Release Experiments in the Arctic”*

10:30 – 10:45 Landing William M. (wlanding@fsu.edu) Florida State University, USA: *“GEOTRACES Arctic Program”*

C. Ecosystem experiments (Conveners: Katya Popova and Nadja Steiner)

10:45 – 11:00 Popova Ekaterina (e.popova@noc.ac.uk) NOC Southampton, UK: *“Role of advection in Arctic Ocean ecosystem dynamics”*

11:00 – 11:15 Steiner Nadja (Nadja.Steiner@ec.gc.ca, Canadian Centre for Climate Modeling and Analysis, Canada): *“Modeling the high-latitude ocean carbon system, opportunities and constraints”*

11:15 – 11:30 Mahadevan Amala (amala@whoi.edu, WHOI, USA): *“Submesoscale processes at the ice edge”*

11:30 – 11:45 Greene Charles (chg2@cornell.edu, Cornell University, USA): *“Remote Climate Forcing of Regime Shifts in Northwest Atlantic Shelf”*

D. Circulation experiments (Conveners: Greg Holloway and Yevgeny Aksenov)

11:45 – 12:00 Aksenov Yevgeny et al. (yka@noc.ac.uk) NOC Southampton, UK: *“Pacific and Atlantic water circulation coordinated studies”*

12:00 – 13:00 Lunch

13:00 – 13:15 Karcher Michael (Michael.Karcher@awi.de, AWI, Germany): *“On changes in the surface and mid-depth circulation of the Arctic Ocean”*

13:15 – 14:45 Future experiments group meetings (group meetings in conference rooms: Clark 507, Clark 509, Clark 428 and Clark 331)

14:45 – 15:00 Coffee break

15:00 – 16:00 Future experiments plenary session (Conveners: Andrey Proshutinsky and Mike Steele)

SESSION 5: Satellite-based analysis and methods for the Arctic Ocean
(Conveners: Seymour Laxon and Sinead Farrel)

16:00– 16:15 Farrell Sinead L. (Sinead.Farrell@noaa.gov) ESSIC/CICS/Univ. Maryland: *“Deriving High Resolution Sea Ice Statistics from Aircraft and Satellite Observations and their use in Model Validation”*

16:15 – 16:30 Peralta-Ferriz Cecilia (ferriz@apl.washington.edu) UW, USA: *“Arctic Ocean circulation patterns using GRACE”*

16:30 – 16:45 Laxon Seymour (swl@cpom.ucl.ac.uk), University College London, UK: *“Estimates of ice thickness and volume from CryoSat-2”*

16:45 – 17:00 Giles, Katharine (k.giles@cpom.ucl.ac.uk), University College London, UK: *“Sea surface height from Envisat and CryoSat-2”*

17:00 – 17:15 Gennady Chepurin and James Carton (chepurin@umd.edu, carton@atmos.umd.edu) University of Maryland, USA: *“Sea level variations in the Arctic Seas: an examination of the altimeter record”*

17:15 – 17:45 Discussion: Synthesis of satellite, in situ and modeling data (Moderators: Seymour Laxon and Sinead Farrel)

17:45 -18:15 Poster session

Friday, October 26, 2012

Clark Building, Room 507

8:30 – 8:45 Coffee

SESSION 6: Models and fluxes (Conveners: Rebecca Woodgate and Camille Lique)

08:45 – 09:00 Dukhovskoy Dmitry et al. (ddukhovskoy@fsu.edu) FSU COAPS, USA: *“The sensitivity of the oceanic processes in the Nordic Seas to uncertainties in the wind forcing from the 1/12-degree Arctic Ocean HYCOM – CICE coupled system”*

09:00 – 09:15 Dupont Frederic (Frederic.Dupont@ec.gc.ca) CMC, Environment Canada: *“Environment Canada 1/12th ice-ocean Arctic-Atlantic model: preliminary results and validation”*

09:15 – 09:30 Lique Camille and Mike Steele (liquec@uw.edu) UW, USA: *“Variability of Arctic Ocean heat content: A model-based analysis and implications for autonomous observing systems”*

09:30 – 09:45 Platov Gennady (plat@ommfao.sccc.ru) Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk, Russia: *“Lagrangian tracer simulations of the Arctic fresh water sources”*

09:45 – 10:00 Coffee break

10:0 – 10:15 Woodgate Rebecca (woodgate@apl.washington.edu) UW, USA: *“Measuring (and modeling) structure in the Bering Strait. - things you learn taking a modeler to sea”*

10:15 – 10:30 Long Zhenxia (Zhenxia.Long@dfp-mpo.gc.ca, Bedford Institute of Oceanography , DFO, Canada) **and Perrie William** (Dalhousie University, Canada, wperrie@dal.ca): *“Simulated interannual variations of fresh water content and sea surface height in the Beaufort Sea”*

10:30 – 12:00 Coordinated activities (group meetings in conference rooms: Clark 507, Clark 509, Clark 428 and Clark 331)

12:00 – 13:00 Coordinated activities (group reports)

13:00 – 13:30 Workshop adjourn and final remarks

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

1. **Bouchat Amelie** (amelie.bouchat@gmail.com, McGill University, Canada): *"The energetics of viscous-plastics sea of sea ice models"*
2. **Chaudhuri Ayan** (achaudhu@aer.com, AER, USA): *"Evaluation of trends, modes and events from the next generation atmospheric reanalysis for forcing Arctic Ocean models"*
3. **Curry Beth** (beth4cu@uw.edu, UW, USA): *"Observational study of Davis Strait fluxes"*
4. **Deal Clare** (clara.deal@gmail.com, UAF,USA): TBD
5. **Hata Yukie** (yukie.hata@mail.mcgill.ca) McGill University, Canada: *"Preliminary results on an Ice Stress Buoy from the Canadian Arctic Archipelago"*
6. **Jackson Jennifer** et al. (jjackson@apl.washington.edu, UW, USA): *"The hydrography of the North Ellesmere Shelf, Lincoln Sea, based on hydrographic and modeling results from 1991-2010"*
7. **Jin Meibing** (mjn@alaska.edu, IARC, USA): *"Improving subgrid scale ocean mixing under sea ice in climate model"*
8. **Kawaguchi Yusuke** (yusuke.kawaguchi@jamstec.go.jp , JAMSTEC, Japan): *"Observational study of a linkage among ice deformation, mixed layer warming and ice melt"*
9. **Luneva Maria** (mane1@noc.ac.uk ,National Oceanographic Center, UK): *"Free waves and energy partitioning in a polar basin with topography: results of adjustment problem"*
10. **Luneva Maria and Clare Postlethwaite** (mane1@noc.ac.uk ,National Oceanographic Center, UK): *"The effects of summer ice openings on the brine rejection and cascades in the Arctic Ocean."*
11. **Lu Youyu and Simon Higginson**: Dynamics of flow and volume transport through CAA and Davis Strat"
12. **Meyers Paul** (pmyers@ualberta.ca, University of Alberta, Canada): *"Modeling of freshwater pathways from the Arctic Ocean to the sub-polar North Atlantic via the Canadian Arctic Archipelago"*
13. **Mills Thomas** (tjmills@nps.edu, Naval Postgraduate School, USA): *Poster: "An analysis of sea ice deformation and its spatial characterization from the Regional Arctic System Model"*
14. **Sheldon Bacon and Nurser George** (g.nurser@noc.ac.uk, National Oceanography Centre, Southampton, Southampton, U.K.): *"Arctic Ocean Rossby Radius"*
15. **Paquin J.-P.**, et al. (paquin.jeanphilippe@gmail.com) UQAM Montreal, Canada): *"Causes and consequences of mid-21st Century Rapid Ice Loss Events simulated by the Rossby Centre Regional Atmosphere-Ocean model"*
16. **Perrie W.** (wperrie@dal.ca, Dalhousie University), **and Z. Long** (Zhenxia.Long@dfm-mpo.gc.ca, Canada Bedford Institute of Oceanography, Canada): *"Air-sea interactions during an Arctic storm"*
17. **Peterson K. Andrew** et al. (drew.peterson@metoffice.gov.uk, Met Office Hadley Centre, UK): *"Ice Analysis and Prediction with the UKMO Seasonal Forecast System: GloSea"*
18. **Piacsek Steve** (Steve.Piacsek@nrlssc.navy.mil , NRL, USA): *"Arctic Watermasses Derived from Models, Climatologies and CTDs"*

19. **Prinsenber Simon** (Simon.Prinsenber@dfo-mpo.gc.ca, Fisheries and Oceans Canada, Bedford Institute of Oceanography, Canada): *"Electromagnetic-Laser Sea ice Data from Canadian coastal pack ice collected by helicopter-borne sensors"*
20. **Proshutinsky Andrey et al.** (aproshutinsky@whoi.edu) WHOI, USA: *"Roles of different factors in shaping the Arctic Ocean hydrography and circulation"*
21. **Renaud-Desjardins Louis** (louis.renaud-desjardins@mail.mcgill.ca) McGill University, Canada: *"Vertical ocean heat fluxes and the sea ice mass balance in the CCSM4 model"*
22. **Richter-Menge Jackie** (Jacqueline.A.Richter-Menge@usace.army.mil), CRREL, USA: "Sea ice observational data for model validation: sources, status and problems"
23. **Stanley Rachel** (rstanley@whoi.edu, WHOI, USA): *"The Effect of Sea Ice on Gross Primary Production and Net Community Production: a Study in the Canada Basin"*
24. **Stewart Kial D. & T. W. N. Haine** (kialstewart@jhu.edu, The Johns Hopkins University, USA): *"Bounds on Wind-Driven Arctic Freshwater Export Anomalies"*
25. **Strey-Mellema Sara** (sstrey2@atmos.uiuc.edu, University of Illinois, USA): "Cold Air Outbreaks over the Gulf Stream and Implications for Arctic and North Atlantic Ocean Circulation"
26. **Timmermans Mary-Louise** (mary-louise.timmermans@yale.edu) Yale University, USA: *"Contributions to seasonal sea level variability in the Beaufort Gyre region"*
27. **Webster Melinda** (melindawebster@gmail.com, UW, USA): *"2012 Springtime Snow Conditions near Barrow"*
28. **Wekerle Claudia** (claudia.wekerle@awi.de, AWI, Germany): *"Modeling freshwater transports through the Canadian Arctic Archipelago"*
29. **Whitefield Jonathan** (jwhitefield@alaska.edu, UAF, USA): *"Using in situ observations to validate the performance of a high-resolution global model in the Bering, Beaufort and Chukchi Seas"*