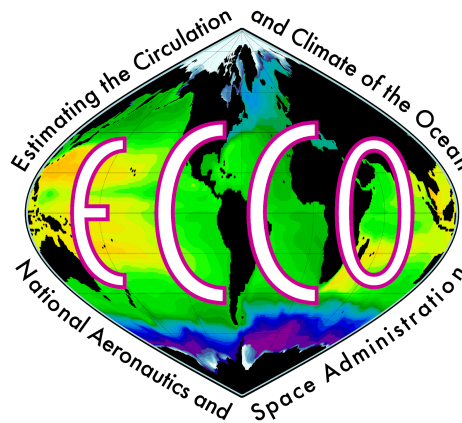


# 2024 ECCO Annual Meeting Agenda

March 20-22, 2024



<https://www.ecco-group.org/updates-more.htm?id=53>

University of Texas at Austin  
Oden Institute for Computational Engineering and Sciences  
Avaya Auditorium, [Peter O'Donnell Building \(POB\)](#), room 2.302  
201 E. 24th St.  
Austin, TX 78712

## Wednesday, March 20

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### 8:30 – 9:00: Breakfast, POB 6308

#### 9:00 - 10:30 Session 1: Opening (P. Heimbach chair)

- 9:00: Patrick Heimbach: Welcome to the 2024 ECCO Meeting
- 9:15: Nadya Vinogradova-Shiffer: NASA Ocean Physics
- 9:30: Thorsten Markus: Cryosphere Program update
- 9:45: David Considine: MAP Program Update
- 10:00: Ian Fenty: Status of ECCO Central Production
- 10:15: Ariane Verdy: Regional State Estimation Activities at Scripps Institution of Oceanography

### 10:30 - 11:00 Break, POB 6.308

#### 11:00 - 12:30 Session 2: Science applications: ocean dynamics (D. Menemenlis chair)

- An Nguyen: The Arctic Subpolar gyre sTate Estimate(ASTE)
- Helen Pillar: ECCO for AMOC Science
- Emma Boland: Surface Controls of Freshwater Export Through Denmark Strait
- Yavor Kostov: Surface Factors Controlling the Volume of Accumulated Labrador Sea Water
- Paola Cessi: AMOC Lagrangian Mass, Heat & Salt Transport
- Discussion

### 12:30 - 2:00 Lunch, POB 6.308

#### 2:00 - 3:30 Session 3: Science applications: ocean dynamics (H. Pillar chair)

- Dan Amrhein: Combining Adjoint Sensitivities and ECCOv4-r4 Air-Sea Fluxes to Determine Dominant Drivers of North Atlantic Subpolar Gyre Variability
- Tony Lee: Ocean Dynamic Persistence Provides Substantial Predictability for El Niño-Southern Oscillation (ENSO)
- Ou Wang: What Forcing Mechanisms Affect Interannual Sea Level Co-Variability Between the Northeast and Southeast Coasts of the United States?
- Andrew Delman: Sea Level Variability, Attribution, and Prediction Using ECCO
- Ichiro Fukumori: ECCO Modeling Utilities (EMU)
- Discussion

### 3:30 - 4:00 Break, POB 6.308

#### 4:00 - 5:30 Session 4: Science applications: ocean dynamics (R. Ponte chair)

- Cora Hersh: A First Look at Modified-Forcing Experiments to Investigate Drivers of Interannual Variability in Subtropical-to-Tropical Pathways
- Ivana Cerovečki: Decadal Reorganization of Subantarctic Mode Water
- Gaël Forget: Energy Imbalance in the Sunlit Ocean Layer (SOL-EI)
- David Halpern: ECCO Equatorial Currents
- Discussion

## Thursday, March 21

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**8:30 – 9:00: Breakfast, POB 6.308**

**9:00 - 10:30 Session 1: High-res Applications (P. Heimbach chair)**

- Lee Fu: Early Oceanographic Results from SWOT
- Dimitris Menemenlis: Preliminary Comparisons of High-Resolution ECCO and GEOS/ ECCO Simulations with SWOT data
- Ariane Verdy: Assimilating SWOT data
- Hector Torres: Impact of Ocean Eddies and Submesoscales on the Atmospheric Water Cycle

**10:30 - 11:00 Break, TBD**

**11:00 - 12:30 Session 2: BGC Science Applications (A. Verdy chair)**

- Dustin Carroll: ECCO-Darwin Development Update
- Karen Willcox (Oden Institute Director): Foundational Research Gaps and Future Directions for Digital Twins
- Dan Whitt: Elucidating the Role of Ocean Circulation in Changing North Atlantic Nutrients and Biological Productivity
- Raphaël Savelli: Global-Ocean Carbon and Biogeochemical Response to Input from Rivers and Coastal Wetlands
- Clément Bertin: Modeling Arctic River Plumes Carbon Cycling with ECCO-Darwin
- Discussion

**12:30 - 2:00 Lunch, POB 6.308**

**2:00 - 3:30 Session 3: Science Applications (A. Nguyen chair)**

- Ivana Escobar: Underwater Sound Propagation within Ocean General Circulation
- Rui Ponte: How Well Do We Know the Seasonal Cycle in Ocean Bottom Pressure?
- Daniel Cheng: ECCO-Ice Multi-Decadal Ice Sheet State Estimation
- Andrea Molod: GEOS-MITgcm Status
- Matt Goldberg: Subsea Cable Observing System Design with Regional Models
- Discussion

**3:30 - 4:00 Break, TBD**

**4:00 - 5:15 Session 4: Frontiers (O. Wang chair)**

- Nina McCurdy: Supporting ECCO Science at AMES
- Andrew Delman: ECCO Python Tutorials in the Cloud
- Yanzhou Wei (via Heimbach): Atmospheric Forcing-Induced Uncertainties in the ECCO State Estimate
- Discussion

## Friday, March 22

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**8:30 – 9:00: Breakfast, POB 6.308**

**9:00-10:30 Session 1: Algorithm & tool development**

- Hong Zhang: Model/Observation Comparison in Recent ECCOs: Sea-ice Fields in Southern Ocean
- Dimitris Menemenlis: A Few More GEOS-ECCO Updates
- Shreyas Gaikwad: MITgcm and Tapenade
- Laurent Hascoet & Jean-Luc Bouchot: Tapenade development & maintenance

**10:30 - 11:00 Break, TBD**

**11:00-12:30 Session 2: Algorithm & tool development (cont.)**

- Jean-Michel Campin: MITgcm Development
- Max Trostel: Stochastic Parametrization and Adjoint Methods: Exploring a Toy Problem
- Simone Silvestri: Oceananigans Performance

**Lunch 12:30-2:00, POB 6.308**

**2:00-3:30 Session 3: Algorithm & tool development (cont.)**

- Kevin Marlis: ECCO Observation Pipeline
- Greg Moore: ECCO Dataset Production
- Gaël Forget: ECCO with Julia, and Cyberinfrastructure

**Moderated Discussion**

- How can ECCO improve better address societally-relevant issues?
- How can we better engage the broader research community and students?
- Planning for the next steps
- Walk-on topics

**Break 3:30-4:00, TBD**

**Session 4, 4:00-5:30: Moderated Discussion (cont.)**