

USCMS Topical (virtual) Workshop on  
[Predictability Limits Arising from Model and Prediction System Challenges](#)

28-30 June 2021  
(All times are EDT)

(version 24 June 2021)

28 June 2021 (Monday): [Day 1 Youtube Video](#)

*Chair: Gokhan Danabasoglu*

- 11:00 Gary Geernaert: Welcome and Background
- 11:10 Gokhan Danabasoglu: Workshop objectives and outcomes
- 11:20 Annarita Mariotti: Earth system predictability R&D interagency strategy and roadmap
- 11:45 Jim Hurrell: Summary and outcomes of the NAS meeting on predictability

Modeling Center Efforts

- 12:10 Baoqiang Xiang: “Seamless system for Prediction and EArth system Research” (SPEAR) S2S prediction system and its prediction of different types of MJO
- 12:35 Feiyu Lu: Relating predictability, predictions, and model bias for seasonal predictions with GFDL's “Seamless system for Prediction and EArth system Research” (SPEAR)

13:00 *Break*

*Chair: Susanne Bauer*

- 13:25 Yaga Richter: Subseasonal prediction research framework with CESM2 and examples of its use for understanding sources of predictability
- 13:50 Steve Yeager: The benefits of large ensembles in CESM multiyear to decadal predictions
- 14:15 Ruby Leung: Overview of DOE activities
- 14:40 Jerry Meehl: Initialization method and model bias, drift, trends, and skill of seasonal-to-decadal initialized climate predictions in CESM and E3SM
- 15:05 Gokhan Danabasoglu: Charge for breakout groups and anticipated outcomes
- 15:30 *Adjourn for the day*

29 June 2021 (Tuesday): [Day 2 Youtube Video](#)

*Chair: John Dunne*

Modeling Center Efforts (continued)



- 11:00 Avichal Mehra: Development of GEFS/SFS models
- 11:25 Vijay Tallapragada: Development of coupled UFS for medium range and S2S predictions: A collaborative effort supported by the UFS-R2O project
- 11:50 Clara Orbe and Ron Miller: Overview of predictability using the GISS model  
Air-Sea Interactions; Signal-to-Noise Paradox; Model Deficiencies
- 12:15 Doug Smith: A signal-to-noise paradox in climate science
- 12:40 Chris Roberts: Role of resolution and SST biases in predictability in the ECMWF model
- 13:05 *Break*  
*Chair: Maria Molina*
- 13:30 Ben Kirtman: Sub-seasonal to decadal predictability and prediction with ocean eddy resolving models
- 13:55 Isla Simpson: Model deficiencies in the representation of low frequency variability and/or forced trends
- 14:20 Breakout Groups (5-10 groups)
- 15:30 *Adjourn for the day*

30 June 2021 (Wednesday): [Day 3 Youtube Video](#)

*Chair: Haiyan Teng*

Focus Areas

- 11:00 Susannah Burrows: Predictability limits due to aerosol – Earth system interactions
- 11:25 Maria Molina: Overcoming and detecting model predictability limits using machine learning
- 11:50 Yuejian Zhu: Stochastic forcing, ensemble development, and reanalysis and reforecast
- 12:15 Ming Zhao: Simulations of atmospheric rivers, their variability, and response to global warming using GFDL’s new high-resolution general circulation model
- 12:40 Wenhao Dong: Projected changes in monsoon low pressure/depression systems and precipitation patterns
- 13:05 *Break*  
*Chair: Gokhan Danabasoglu*
- 13:30 Celine Bonfils: Disentangling the role of aerosols and greenhouse gases in the recent decadal changes in hydroclimate
- 13:55 Haiyan Teng: Heat waves and the 1990s shift



 U.S. Global Change  
Research Program

14:20 Summaries from Breakout Groups

14:45 Discussion

15:30 *End of the Workshop*

