

Workshop on Digital Twins in Atmospheric, Climate, and Sustainability Science

WEDNESDAY, FEBRUARY 1, 2023

10:00–10:10 Welcome and Housekeeping

Ruby Leung (Pacific Northwest National Laboratory)

10:10–11:20 Opening Plenary (3 speakers, 15 minutes each. Remaining time for Q+A ~25 min)

Definition of Digital Twins (DT) in general and in the context of atmospheric, climate, and sustainability sciences, vision of DT in this application area and in decision-making, overall challenges, opportunities, and successes. Moderated by Ruby Leung (PNNL)

Peter Bauer (ECMWF)

Venkatramani Balaji (Schmidt Futures)

Mark Taylor (Sandia National Laboratories)

11:20–11:30 Break

11:30–12:30 Panel 1: Current Methods and Practices (4 speakers, 7-8 minute remarks. Slides optional, 2 slides max. Remaining time for Q+A)

Moderated by Xinyue Ye (Texas A&M University) and Colin Parris (GE Digital)

Yuyu Zhou (Iowa State University)

Jean Francois Lamarque (McKinsey)

Gavin A. Schmidt (NASA Goddard Institute for Space Studies)

Christiane Jablonowski (University of Michigan)

12:30–1:30 Break

1:30–2:30 Panel 2: Key Technical Challenges and Opportunities (5 speakers, 5 minute remarks. Slides optional, 1 slide max. Remaining time for Q+A)

Moderated by Julianne Chung (Emory University) and Jim Kinter (George Mason University)

Tapio Schneider (California Institute of Technology)

Mike Pritchard (NVIDIA/U. California Irvine)

Omar Ghattas (University of Texas at Austin)

Abhinav Saxena (GE Research)

Elizabeth A. Barnes (Colorado State University)

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THURSDAY, FEBRUARY 2, 2023

10:00–10:05 Welcome Back and Housekeeping

Colin Parris (GE Digital)

10:05–11:00 Panel 3: Translation of Promising Practices to Other Fields (4-5 panelist, roundtable style discussion, 40 minutes. 15 minutes for Q+A)

Moderated by Ruby Leung (PNNL) and Julianne Chung (Emory University)

Cecilia Bitz (University of Washington)

Anima Anandkumar (California Institute of Technology)

Emanuele Di Lorenzo (Brown University)

Anna Michalak (Carnegie Institution for Science)

John Harlim (Pennsylvania State University)

11:00–11:30 Break

11:30–12:30 Panel 4: Special Session on Transparency, Societal Benefit, and Equity (3 panelists, fireside chat, 40 minutes. Remaining time for audience Q+A)

Moderated by Xinyue Ye (Texas A&M University), Colin Parris (GE Digital)

Amy McGovern (University of Oklahoma)

Mike Goodchild (University of California - Santa Barbara)

Mark Asch (Université de Picardie Jules Verne)

12:30–1:00 Summary and Convergence

NASEM Study Committee

MEETING ADJOURNED
