

Potential Contributions of Artificial Intelligence and Machine Learning-Assisted Techniques for Extreme Precipitation Modeling

Information-Gathering Session

DATE: OCTOBER 6, 11AM-1 PM EDT

Guiding Questions

- How well can existing or foreseeable AI/ML techniques emulate climate models to create very large ensembles of simulations at high resolution (e.g., 25 km or higher)?
- What AI/ML approaches can best be used to simulate or infer high-resolution extreme precipitation in space and time given a suitable large-scale environment?
- What major advances (speed, accuracy, etc.) do you expect to be produced by integration of ML/AI techniques within physics-based climate models?
- What are the prospects and limitations for AI/ML based modeling of the properties of very extreme precipitation from different types of storms in the present and in a changing climate?

11:00–11:10AM

Welcome, Housekeeping, Introduction

11:10–12:00

Session 1

11:10–11:30

Mike Pritchard, *University of California, Irvine (UCI); NVIDIA*

11:30–11:50

Bill Collins, *Lawrence Berkely National Laboratory (LBNL)*

11:50–12:00

Questions for Session 1

12:00–1:00

Session 2

12:00–12:20

Chris Bretherton, *University of Washington; AllenAI*

12:20–12:40

Pierre Gentine, *Columbia University*

12:40–12:50

Questions for Session 2

12:50–1:00pm Final questions and closing remarks