

# EXCLAIM Symposium

ETH Zurich, Switzerland

June 2-4, 2025

## Is AI the Future of Weather and Climate Modeling?

### CALL FOR ABSTRACTS

**ETH** zürich

 EXCLAIM

 C2SM  
Center for Climate  
Systems Modeling

 CSCS

 Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation

Federal Department of Home Affairs FDHA  
Federal Office of Meteorology and Climatology MeteoSwiss

**MeteoSwiss**

# Is AI the Future of Weather and Climate Modeling?

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### TOPIC OF THE SYMPOSIUM

Is AI the Future of Weather and Climate Modeling?

### KEY OBJECTIVES

Analyze and discuss the latest advancements in numerical and AI-based weather and climate modeling. Identify key trends, challenges, and opportunities shaping the field. Leverage the synergies between numerical methods and AI-based approaches to advance weather and climate modeling, with a strong commitment to ethical, responsible, and reproducible AI practices.

### DATE

June 2-4, 2025

### LOCATION

ETH Zurich, Rämistrasse 101, 8006 Zürich, Switzerland

### TARGET AUDIENCE

Scientific communities working on both numerical and AI-based modeling approaches  
Representatives from companies working on HPC and machine learning methods  
Early career researchers

### FORMAT

The symposium will be held in-person.  
The sessions will be live-streamed, however, online presentations are not possible.  
All presenting authors are required to participate on-site.

### KEYNOTE SPEAKERS (confirmed as of Dec 20, 2024)

Dr. Peter M. Caldwell, DOE LLNL - Leader of the Simple Cloud-Resolving E3SM Atmosphere Model  
Dr. Peter Düben, ECMWF - Head of the Earth System Modelling Section  
Dr. Cathy Hohenegger, MPI-M - Leader of the Climate Surface Interaction Group  
Dr. Stephan Hoyer, Google - Team lead at Google Research building AI weather and climate models  
Dr. Maria J. Molina, University of Maryland - Assistant Professor of Atmospheric and Oceanic Science  
Dr. Inna Polichtchouk, ECMWF - Senior Scientist Numerical Methods

More keynote speakers to be announced on the [symposium website](#) soon.

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## CALL FOR ABSTRACTS

### ABSTRACT SUBMISSION

Please submit your abstract through our online portal at <https://exclaim-symposium.ethz.ch/>.  
Ensure that your submission aligns with one of the symposium sessions and adheres to the word limit of 350 words.

### EXTENDED ABSTRACT SUBMISSION DEADLINE

**January 26, 2025**

### SESSION TOPICS

Session A - Creating the foundations of AI-based modeling of weather and climate  
Session B - Harnessing the power of AI in modeling weather and climate  
Session C - Harnessing the power of physics-based modeling of weather and climate  
Session D - Merging AI and physics-based modeling of weather and climate

### PRESENTATION FORMAT

Oral presentations (12 min presentation + 3 min Q&A) and Posters

### REVIEW PROCESS

All submitted abstracts will be peer-reviewed.  
Authors will be notified of acceptance by the end of February 2025.

### LANGUAGE

The official language of the symposium is English.

### CONTACT

www: <https://exclaim-symposium.ethz.ch/>  
e-mail: [exclaim-symposium@c2sm.ethz.ch](mailto:exclaim-symposium@c2sm.ethz.ch)

### SCIENTIFIC ORGANIZING COMMITTEE

Dr. Oliver Fuhrer, MeteoSwiss  
Prof. Nicolas Gruber, ETH Zurich  
Prof. Torsten Hoefler, ETH Zurich  
Prof. Siddhartha Mishra, ETH Zurich

Prof. Andreas Prein, ETH Zurich  
Prof. Thomas Schulthess, CSCS  
Prof. Heini Wernli, ETH Zurich

# Is AI the Future of Weather and Climate Modeling?

## PRELIMINARY PROGRAM

	Monday June 2, 2025	Tuesday June 3, 2025	Wednesday June 4, 2025
8h-9h	Registration		
9h-10h	Welcome coffee	Session B	Session C
10h-11h	Tutorial	Coffee break	Coffee break
11h-12h		Session B	Session D
12h-13h		Lunch break	Lunch break
13h-14h	Lunch break	Lunch break	Lunch break
14h-15h	Session A	Session C	Session D
15h-16h	Coffee break	Poster session & Coffee break	
16h-17h	Session A		
17h-18h	Poster session & Icebreaker		
18h-19h			
19h-20h		Conference dinner	
20h-21h			
21h-22h			

Tutorial - How to use modern ML tools for weather and climate modeling (TBC)

Session A - Creating the foundations of AI-based modeling of weather and climate

Session B - Harnessing the power of AI in modeling weather and climate

Session C - Harnessing the power of physics-based modeling of weather and climate

Session D - Merging AI and physics-based modeling of weather and climate