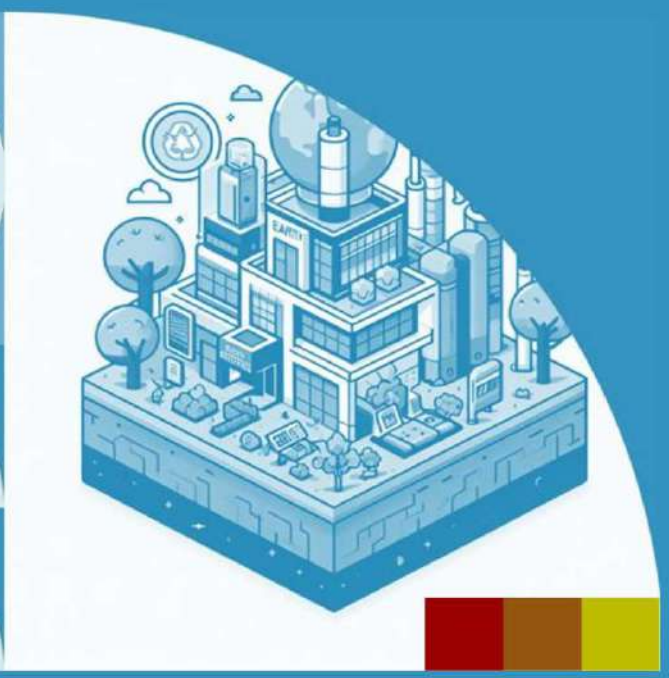
climes
Swedish centre for impacts of climate extremes



Swedish centre for impacts of climate extremes

interdisciplinary

SUMMER SCHOOL

on impacts of climate extremes

UPPSALA UNIVERSITET

LUNDS UNIVERSITET

RI. SE

FUNDED BY:
Vetenskapsrådet

SCHEDULE

	Monday 16th	Tuesday 17th	Wednesday 18th	Thursday 19th
09.00-09.15 **09.15-10.15**	Introduction (G. Messori) Lecture Climate Extremes (G. Messori)	Lecture climate impacts (G. Messori)	Lecture population health (E. Raffetti)	Lecture weather and impact forecasting (R. F. Franco)
10.15-10.45	Break	Break	Break	Break
10.45-12.00	Lecture AI (J. Nivre/ O. Mogren)	Lecture disproportionate impacts (E. Boyd)	Citizen science (S. Vihriälä)	Exercise Session (T. Carvalho)
12.00-13.15	Lunch	Lunch	Lunch	Lunch
13.15-14.30	Exercise Session (T. Carvalho)	Activity (Emilia Ganslandt)	Citizen science (S. Vihriälä)	Exercise Presentation
14.30-15.00	Break	Break	Break	Break
15.00-16.15	Exercise Session (T. Carvalho)	Activity (Alicia N'guetta)	Exercise Session (T. Carvalho)	
		Social Event & School dinner		

Lectures

Extreme Events in the Climate System
Gabriele Messori, Uppsala University
This lecture will provide a broad overview of extreme events in the climate system, including definitions of extreme events and historical observations and trends. We will also touch upon so-called compound extremes, whereby different extreme events are interlinked, and the emerging field of extreme event attribution.

AI for Climate Applications
Joakim Nivre, Uppsala University
Olof Mogren, Research Institutes of Sweden AB
This lecture will start with a short introduction to recent advances in AI in general, followed by two half-hour blocks focusing on AI applications related to climate within the areas of deep learning and natural language processing.

Challenges and Opportunities for Studying Impacts of Climate Extremes
Gabriele Messori, Uppsala University
This lecture will highlight the importance of studying the impacts of climate extremes, the practical hindrances to doing this, and promising new approaches that may help advance this field of research.

Disproportionate Impacts of Climate Extremes
Emily Boyd, Lund University
This lecture covers both theory and methods of studying the disproportionate impacts of climate extremes, highlighting how many climate extremes have unequally distributed impacts across different parts of society. We will also present examples of loss and damage in a range of empirical contexts.

Impacts of Climate Extremes on Population Health: Methods and Insights
Elena Raffetti, Karolinska Institutet
This lecture will explore the methods used to assess the impacts of climate extremes on population health, and provide insights from recent research on the topic.

Extreme Weather Events: Advances in warnings and hazard and impact forecasting
Ramón Fuentes Franco, Swedish Meteorological and Hydrological Institute
This lecture will explore how we forecast both the climate hazards associated with the extreme events and their impacts, and how such forecasts help to minimise societal impacts through early warnings. We will show concrete examples from the operational early warnings issued by the Swedish Meteorological and Hydrological Institute. We will also highlight the latest research in enhancing these systems. In particular, we will present recent developments in AI-based algorithms aimed at improving the detection and forecasting of extreme events, offering new possibilities for more timely and accurate early warnings.

Activities

Automated Extraction and Analysis of Impacts of Climate Extremes
Taís N. Carvalho, Leipzig University
The practical exercise combines the topics covered in the different lectures. You will work in small groups and have the occasion to test tools for the automated extraction of information on impacts of climate extremes from textual data. You will next work on validating and interpreting the data, with a focus on understanding the potentialities and limitations of the tools you have been using. A detailed set of instructions for the exercise will be provided prior to the start of the school.

Citizen Science for Climate Hazards and Impacts

Sami Vihriälä, Uppsala University
Citizen science can bring benefits to both researchers and society. We will present the concept of citizen science and foster a discussion on the possibilities and challenges. We will also take a brief look at some completed projects and a ongoing citizen science project focussing on extreme weather. The participants will then have the opportunity to outline their own citizen science project, with a focus on climate hazards and impacts.