Objective

Climate extremes have multifarious detrimental impacts on human activities and ecosystems. Gaining a detailed understanding of these impacts is essential for disaster risk reduction and for building resilience to extremes in a changing climate. However, current freely-accessible natural hazard databases present limitations in completeness, updateability, validation against climate data and indirect impact information. This hinders scientific and practical progress.

In ICE-MOT, I aim to build a state-of-the-art impact database for extreme climate events, which overcomes the above key limitations. I will specifically combine text-mining of freely available online sources, with the use of state-of-the-art climate data. To ensure feasibility, I will initially focus on English-language texts and on wintertime cold spells in North America and windstorms and heavy precipitation in Europe – extreme events which I have studied extensively in my ongoing ERC project.
ICE-MOT builds upon the database of climate extremes developed within my ongoing ERC project. It further leverages the experience of my research group in data-driven and machine learning analyses for climate science. I will use this interdisciplinary knowledge base to provide standardised, complete and automatically updateable spatio-temporal impact information, including indirect and/or cascading impacts, and quantify the climate conditions associated with the recorded impacts. Moreover, the database’s automated data extraction and processing pipeline will make it easily scalable to multiple regions and climate extremes.

This effort is timely: the recent EU strategy on adaptation to climate change explicitly seeks to “gather more and better data on climate-related risks and losses” as a key adaptation tool. Moreover, the climate extremes data gathered in my ongoing ERC project provides a perfect basis to test the innovative idea underlying the ICE-MOT database, an opportunity which should be rapidly exploited.

**Fields of science**

natural sciences > computer and information sciences > databases

natural sciences > biological sciences > ecology > ecosystems

natural sciences > earth and related environmental sciences > physical geography > natural disasters

natural sciences > earth and related environmental sciences > atmospheric sciences > climatology > climatic changes

natural sciences > computer and information sciences > artificial intelligence > machine learning

**Programme(s)**

HORIZON.1.1 - European Research Council (ERC) **MAIN PROGRAMME**

**Topic(s)**

ERC-2022-POC2 - ERC PROOF OF CONCEPT GRANTS2

**Call for proposal**

ERC-2022-POC2

See other projects for this call
Funding Scheme

**HORIZON-ERC-POC - HORIZON ERC Proof of Concept Grants**

Coordinator

**UPPSALA UNIVERSITET**

Net EU contribution

€ 150 000,00

Address

Von kramers alle 4
751 05 Uppsala
Sweden

Region

Östra Sverige > Östra Mellansverige > Uppsala län

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00

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