

Workshop: Compound extremes and cascading impacts and risks

Date: Thursday 03 July 2025 (Day 2 of the RMets Annual Weather and Climate Conference)

Workshop time: 11:30-13:00 BST

Room: TBC

Workshop summary and intended outcomes

Workshop summary

This interdisciplinary workshop will explore the complex interplay of compound hydrometeorological extremes—events involving multiple climate drivers and/or impacts—and their potential to trigger cascading impacts and risks across interconnected systems. Focusing on developing interdisciplinary approaches to improve scientific approaches, impact assessments and risk management strategies, keynote presentations and structured discussions will explore recent advances in identifying, modelling, and predicting compound events and their amplified impacts on critical infrastructure, ecosystems, and communities. The workshop will draw on case studies to highlight real-world examples of high-impact cascading risks, including disruptions to energy, transport and supply chains.

The workshop is seeking interdisciplinary participants including climate scientists, engineers, policymakers, and risk analysts, aiming to fill knowledge gaps and bridge research and application.

The workshop will help identify recent progress and priority research areas in support of the ongoing UK Fourth Climate Change Risk Assessment independent assessment (CCRA4). The workshop will be supported by two Horizon Europe projects MEDiate: Multi-hazard and risk-informed system for enhanced local and regional disaster risk management and COMPASS: Compound extremes attribution of climate change: towards an operational service.

Intended outcomes

- Provide evidence of and latest approaches to compound events/multi-hazards and/or cascading impacts and risks.
- Gather evidence and information to support the ongoing 'Risks to the delivery of infrastructure services from interdependencies with other infrastructure systems' independent assessment of the UK's climate risks for CCRA4 in 2026.

- Enhancing interdisciplinary collaboration on multi-hazard risk by fostering dialogue and cooperation between climate scientists, engineers, infrastructure specialists, data scientists, social scientists, and policymakers.
- Identify priority knowledge gaps and research needs to guide future funding, innovation, and capacity-building efforts in the fields of compound and cascading risk management.

Workshop organisers

This workshop is organised by:

- [Dr Christopher White](#), Director of the Centre for Water, Environment, Sustainability and Public Health, University of Strathclyde
- [Dr Mohammed Sarfaraz Gani Adnan](#), Research Fellow, Brunel University of London
- [Isabel Rushby](#), Applied Climate Scientist, Met Office

This workshop is supported by the Royal Meteorological Society (RMetS) and the British Hydrological Society (BHS), and is contributing to the objectives of two Horizon Europe projects: [MEDiate](#) Multi-hazard and risk-informed system for enhanced local and regional disaster risk management, and [COMPASS](#) Compound extremes attribution of climate change: towards an operational service.



Preliminary agenda

Workshop: Thursday 03 July 2025		
Part 1: Understanding compound extremes and cascading impacts and risks		
11:30 – 11:40	Welcome, introductions & workshop objectives	Chris White, University of Strathclyde
11:40 – 11:55	Keynote 1: Understanding changing compound extremes and cascading impacts in a warming climate	Hayley Fowler, Newcastle University
11:55 – 12:10	Keynote 2: Strategic approaches to climate adaptation for Scotland's railway	David Harkin, Network Rail
Part 2: Exploring challenges, collaborations and solutions for managing compound extremes and cascading impacts		
12:10 – 12:25	Group activity 1: What are the key challenges, knowledge gaps and barriers in understanding and quantifying compound extremes and cascading impacts?	Chris White, University of Strathclyde; Mohammed Adnan, Brunel University; Isabel Rushby, Met Office
12:25 – 12:40	Group activity 2: What are the latest approaches being used to assess and manage compound extremes and cascading impacts? How can we improve their use in practice? How can we develop adaptive solutions through collaboration and capacity-building?	Chris White, University of Strathclyde; Mohammed Adnan, Brunel University; Isabel Rushby, Met Office
12:40 – 12:55	Feedback from the group activities	One member from each group
12:55 – 13:00	Closing remarks	Chris White, University of Strathclyde
13:00	Workshop close	

Please direct any enquiries to Dr Chris White: chris.white@strath.ac.uk