

**Session Title**

Emerging Technologies in Flood Hazard and Flood Risk Estimation

**Format**

Panel Session

**Participants**

Robin Bourke, Public Safety Canada (Moderator)

Julie Van de Valk, EIT, Public Safety Canada

Nathaniel Adams, MSc, KatRisk

Jennifer Nafzgie, PhD, P.Eng, University of Alberta

Anaïs Couasnon, PhD, Deltares

**Description**

This panel discussion will examine how new and emerging technologies are transforming the understanding, mapping, and management of flood hazard and flood risk in a changing climate. The session will highlight how traditional flood models are being updated with advanced components such as remote sensing, artificial intelligence, cloud computing, and high-resolution climate and terrain data. These approaches, working in concert, are enabling us to generate speedier, more accurate, and more granular understanding of flood behavior and its effect on communities. A discussion will follow on how satellite imagery, drone data, and digital elevation models are improving our ability to assess flood dynamics and how AI and machine learning can help to optimize model calibration, enable early event detection, and enable more accurate long-term risk forecasting. Panelists will also discuss some of the benefits of open-access datasets, online modeling platforms, and probabilistic risk methods, which contribute to good decision making by governments, engineers, and insurers.

**Discussion Themes:**

- What new technologies and methodologies are available, and how can this improve the accuracy and usability of flood hazard models?
- What are the opportunities and challenges in integrating AI, satellite data, and open-access platforms into operational flood risk management?
- How can we ensure that these advances lead to equitable, transparent, and actionable outcomes for communities at risk?

Delivering a platform to bring together participants from research, government, and industry, this panel is intended to showcase the advances capable of aiding the transition to more predictive, evidence-based, and climate-resilient flood risk management.

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