NUMTA 2026 Special Session on

Natural Hazard Modelling

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Climate change is intensifying the frequency and severity of extreme events, creating unprecedented threats to human safety, critical infrastructure, and natural ecosystems. Numerical modelling has emerged as an essential tool for simulating the complex physical mechanisms that drive these hazards, enabling forecasting and predictive analysis across all temporal scales, from early warning systems to long-term climate projections, while supporting the evaluation of risk mitigation strategies. The increasing complexity and spatial domains of these simulations demand advanced computational infrastructure to implement large-scale, high-resolution models. Recent advances in Artificial Intelligence and Machine Learning are opening new frontiers in predictive modelling, offering promising opportunities to enhance both computational efficiency and forecast accuracy.

We invite contributions that advance numerical methodologies for assessing, forecasting, and adapting to climate-driven natural hazards. We particularly welcome submissions addressing the following topics:

- Numerical modeling of extreme hydrometeorological phenomena
- Urban flooding and drainage system dynamics
- Wildfire behavior, spread, and impact simulation
- Compound events involving coupled meteo-marine processes
- Modeling climate change effects on groundwater resources
- Artificial Intelligence and Machine Learning applications for enhanced forecasting and predictive modeling