Understanding and managing water extremes: Machine learning-powered data and modeling

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Floods, droughts and their compounds - for example, with each other and with heatwaves, wildfires, landslides - can have devastating consequences for society and sustainability. The needs for engineering research and practice toward a sustainable development are clearly apparent in the challenges of quantifying and being able to timely predict and warn for the linked causes, impacts, and risks of these water-related extremes around the world. This presentation highlights and exemplifies how engineering rises to these quantification challenges with machine learning-powered data and modeling.