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Building Storylines of Future Atmospheric River Floods

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A storyline is defined as a physically self-consistent unfolding of past events or of plausible possible futures (Shepherd et al., 2018). It has advantages in effective risk communication and adaptation, as it moves the emphasis away from probability across to plausibility (Butler et al., 2020). Working as part of the EvoFlood (Quantifying the Evolution of Flood hazard and risk across a changing world) project, this work presents a novel methodology for estimating future hydrology based on not only climatic drivers, but the wider impacts of dams, river regulation and changing land-use. Grounded in historical atmospheric river floods, storylines are extracted from the large ensemble reforecast dataset provided by the Global Flood Awareness System (GloFAS; <http://www.globalfloods.eu/>).

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