



## **A Preliminary Evaluation of Season-ahead Flood Prediction Conditioned on Large-scale Climate Drivers**

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Globally, flood disasters lead all natural hazards in terms of impacts on society, causing billions of dollars of damages each year. Typically, short-term forecasts emphasize immediate emergency actions, longer-range forecasts, on the order of months to seasons, however, can compliment short-term forecasts by focusing on disaster preparedness. In this study, the inter-annual variability of large-scale climate drivers (e.g. ENSO) is investigated to understand the prospects for skillful season-ahead flood prediction globally using PCR-GLOBWB modeled simulations. For example, global gridded correlations between discharge and Nino 3.4 are calculated, with notably strong correlations in the northwestern (-0.4~-0.6) and the southeastern (0.4~0.6) United States, and the Amazon river basin (-0.6~-0.8). Coupled interactions from multiple, simultaneous climate drivers are also evaluated. Skillful prediction has the potential to estimate season-ahead flood probabilities, flood extent, damages, and eventually integrate into early warning systems. This global approach is especially attractive for areas with limited observations and/or little capacity to develop early warning flood systems.