RAL SEMINAR SERIES

Understanding and Modeling Climate-Water-Human Interactions

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Thursday, December 11, 2025

11-12 PM (MT)

HYBRID MEETING FL2-1022 | Watch Live

Research at the interface of climate science and socio-hydrology is essential to address shortcomings and uncertainties in current water resources assessments, enabling sustainable and effective water management and food security. Global freshwater withdrawals have quadrupled over the last 50 years, with about 70% of these withdrawals used for irrigation. Due to the associated massive redistribution of water across the land surface and the pumping of groundwater, irrigation and other water uses are among the most critical human interventions in the coupled water and energy cycles. Here, I motivate and present observations and model-based assessments of climate-water-human interactions, with particular focus on irrigated regions worldwide. I will show the first steps of developing a flexible socio-hydrological modelling tool coupled with (regional) climate modelling systems to better understand and simulate interactions between human water use and the climate system. The results provide new insights for regional water management and help promote and constrain the representation of these processes in next-generation climate and weather forecasting models. Event Website