Disentangling streamflow drivers and forecasting water hazards using Earth Observation

Maynooth University Department of Geography invites you to attend a seminar presented by:

Dr Louise Slater, Loughborough University

Date: October 12th
Time: 4.00pm to 5.30pm
Location: Rocque Lab, Rhetoric House

Recent increases in flood flows in different parts of the world have fuelled a debate on the relative influences of climate and land cover on streamflow. We propose a simple statistical approach to detect the main drivers of changing streamflow in several hundred catchments across the U.S.A and U.K.

Streamflow and water levels are modelled using climate (precipitation, temperature, antecedent wetness) and land cover (cropland, grassland, tree cover, urban areas). We show that model fits improve considerably when including the land cover information. Using these statistical models, we can then produce dynamical forecasts of streamflow and water levels over weekly to decadal timescales. In heavily urbanised or agricultural catchments, we find that changing land use is a key predictor of streamflow and water levels.

This novel approach opens many new possibilities for combining Earth Observation with climate model forecasts to predict a variety of hazards from space using data science techniques.

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Department of Geography Seminar Series
All are welcome

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