

Towards forecasts and early warnings of natural hazards everywhere

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Early warnings of weather driven natural hazards can be vital in ensuring that we are better prepared for upcoming events. Over the last few years increasing opportunities have emerged to base these early warnings on the forecasts provided by global weather prediction systems that have invested in an earth system modelling approach. In particular, improving the representation of the physical processes of the land surface in these models allows better representations of the feedbacks that are important in predicting floods, droughts, heatwaves, wildfire and other land based natural hazards. The ensemble or probabilistic approach used in these prediction systems also allows more informed decisions to be taken which consider the uncertainty in the forecasts. This talk will illustrate some of our recent successes, the best future opportunities and the critical challenges in forecasting and providing early warnings of natural hazards at the global scale, and consider questions such as: when are global forecasts most useful and to what extent can we take local decisions from global forecasts? To what extent should we forecast the impact of the hazard? How can we communicate complex and uncertain forecasts? How can we best co-design forecasting and warning systems with those taking the decisions?