Hydro-JULES

Project 3 - Assessing the performance of new Impact-based Flood Forecasting tools (Forecast Verification Scientist).

Project supervisor(s)
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Project overview

Across the world, operational hydro-meteorological agencies are increasingly using Impact-based Forecasting (IbF) methods to support the warning services they deliver. Many IbF and warning services, such as the Met Office National Severe Weather Warning Service and the Flood Guidance Statements from the Scottish Flood Forecasting Service and Flood Forecasting Centre, use a Risk Matrix approach that combines the potential impact and the likelihood of these impacts occurring.

Whilst the evaluation of hazard (e.g. rainfall or flood) forecasts against observations is well established, evaluation of IbF outputs is an emerging discipline. This project will look at evaluating the performance of the new PREDICTOR (PREDICTing flooding impacts from cOnvective Rainfall) system used by the Scottish Environment Protection Agency and developed with UKCEH and the Met Office. PREDICTOR is a next generation tool that utilises the latest Met Office convective precipitation ensemble forecasting capabilities and an impact-based forecasting approach using the National Flood Risk Assessment flood maps and was used to support the response to Storm Babet.

During the six-week internship, the student will:

- Collate impact data from official and online sources.
- Develop methodologies for categorising impacts.
- Evaluate the value of the PREDICTOR forecasting chain for forecasting surface water flooding impacts.
- Work with the PREDICTOR development team.
- Liaise with operational users and present findings from assessment.

List of competencies / skills required:

- programming language (python, R)
- Interest in hazard forecasting and evaluation.
- Willingness to engage and liaise with scientists and stakeholders.
- Self starter wanting to innovate.
- Data analysis and plotting skills