**Speaker: Jonathan Tawn (Lancaster University)**

**Date: 16/02/2024 at 15:15 in 4 West 1.7 (Wolfson Lecture Theatre)**

**Title: Statistical modelling of the extreme events: from flooding, via sinking ships, to elite swimming**

**Abstract:**
This talk will provide an overview of extreme value theory and methods, and how they can be applied to a range of problems linked to water. In environmental safety assessments interest is in protecting against the impacts of large events. To be cost efficient, there is a need to estimate the chance of the occurrence of events that exceed the largest past events by different amounts. Extreme value theory provides an asymptotically justified basis for such extrapolation. As the information from past extreme events is limited due to their rarity, efficient data exploitation, and exploiting knowledge of the context and of data structures are vital for inference.
I will overview past work I have undertaken motivated by flooding and the sinking of the MV Derbyshire which have influenced Government planning and global design standards. For example, answering the Government posed question, how often in the UK does a 100-year flood occur? Furthermore, I will describe current work on the analysis of longitudinal swimming data (men's 100m breaststroke) investigating the future behaviour of the world record and the performances of current elite swimmers