Title: Spatio-temporal extreme value analysis of temperatures in Ireland

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Abstract:

I will talk about how Ireland's largest temperatures have changed over the last 80 years using data obtained from Met Éireann. The statistical modelling work involves applying extreme value theory techniques to the data, but is complicated by the fact that the data contain many missing values, and are biased towards coastal sites. The models are able to provide both marginal return levels (e.g. what is the 1-in-100-year event at site X?) and also allow for generative spatial understanding of extreme events (e.g. what does an extreme temperature event over Ireland look like under the weather conditions of 2022?). The results show some depressing changes in the degree to which extreme temperature events have increased over Ireland, and some surprising results concerning climate models' abilities to predict extreme temperature events. Joint work with Daire Healy (Ca' Foscari University of Venice), Peter Thorne (Maynooth), and Jon Tawn (Lancaster).