



Strange Floods: The Upper Tail of Flood Peaks in the US and the UK

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We examine the upper tail of flood peak distributions through analyses of annual peak observations from more than 8000 US Geological Survey stream gaging stations and 521 gauging stations spread across the British Isles. We focus on the distribution of the “upper tail ratio”, which is defined as the peak discharge for the flood of record at a stream gaging station divided by the sample 10-year flood magnitude. A striking contrast between record flood peaks and the larger distribution of annual flood peaks in the US and the UK is in the seasonality of flood occurrence, with record floods reflecting a much stronger contribution from warm season convective rainfall. Case studies from the US and UK are presented to highlight properties of strange floods in small watersheds. Analyses are used to synthesize properties of the upper tail of flood peaks.