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A global dataset of sub-daily rainfall indices

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It is still uncertain how hydrological extremes will change with global warming as we do not fully understand the processes that cause extreme precipitation under current climate variability. The INTENSE project is using a novel and fully-integrated data-modelling approach to provide a step-change in our understanding of the nature and drivers of global precipitation extremes and change on societally relevant timescales, leading to improved high-resolution climate model representation of extreme rainfall processes. The INTENSE project is in conjunction with the World Climate Research Programme (WCRP)'s Grand Challenge on 'Understanding and Predicting Weather and Climate Extremes' and the Global Water and Energy Exchanges Project (GEWEX) Science questions.

A new global sub-daily precipitation dataset has been constructed (data collection is ongoing). Metadata for each station has been calculated, detailing record lengths, missing data, station locations. A set of global hydroclimatic indices have been produced based upon stakeholder recommendations including indices that describe maximum rainfall totals and timing, the intensity, duration and frequency of storms, frequency of storms above specific thresholds and information about the diurnal cycle. This will provide a unique global data resource on sub-daily precipitation whose derived indices will be freely available to the wider scientific community.