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A comprehensive space-borne SAR dataset to investigate flood processes: a case study of the England 2007 summer flood

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This project is assessing the degree to which current space-borne SAR imagery, ranging from TerraSAR-X to the ENVISAT-ASAR Wide Swath Mode, enables detailed investigation of flood processes. The flood event selected is a 1-in-100 year flood on the Severn near Tewkesbury, UK, in 2007, for which near-simultaneous aerial photography exists for validation of flood boundary and area retrieval. This comprehensive dataset of about 10 space-borne images of a flood hydrograph that lasted a week allows highlighting the different potential each single image possesses to support flood management and reveal information about flood hydraulics. This could be one of the most comprehensive insights yet into the dynamics of flooding at each scale. It is also expected that the outcome of this project will be equally appreciated by flood practitioners and scientists and may well prove vital to improve flood management with the aim to better mitigate future events with the help of (SAR) satellites.