**Title:** Analysing Topographic Time Series: Geomorphic Change Detection

**Instructors:** James Brasington

**Information:** Rapid advances in remote sensing and survey technologies now enable the acquisition of distributed topographic and bathymetric data at high spatial resolution and precision and over increasingly wide geographic extents. These new datasets offer unparalleled opportunities to quantify landscape change directly, providing insights into sediment transfer processes and the associated morphological evolution of river, coastal and estuarine landforms.

This workshop is targeted towards professionals, researchers and graduate students who work with repeat topographic datasets and are interested in monitoring and interpreting geomorphic change. The workshop will introduce a geospatial toolkit, GCD ([http://gcd.riverscapes.xyz/](http://gcd.riverscapes.xyz/)) which we have developed over the past decade and aims to facilitate the analysis of Digital Elevation Model timeseries while accounting for uncertainty in the underlying surface reconstructions.

We recently released a new version of the GCD software - version 7 - with several exciting new features that enable the extraction of longitudinal analyses of bed level, morphological transport rates and distributed sets of profiles. The key learning outcomes will include:

- A comprehensive overview of the theory underpinning geomorphic change detection
- The fundamental background necessary to design effective repeat topographic monitoring campaigns and distinguish geomorphic changes from noise
- Methods for interpreting and segregating morphological sediment budgets quantitatively
- Hands-on instruction with the new GCD 7 software through self-paced exercises
- An opportunity to interact with the GCD developers.

**What to bring:** A laptop with ArcGIS v.10.4 or later

**Max # of participants:** 20