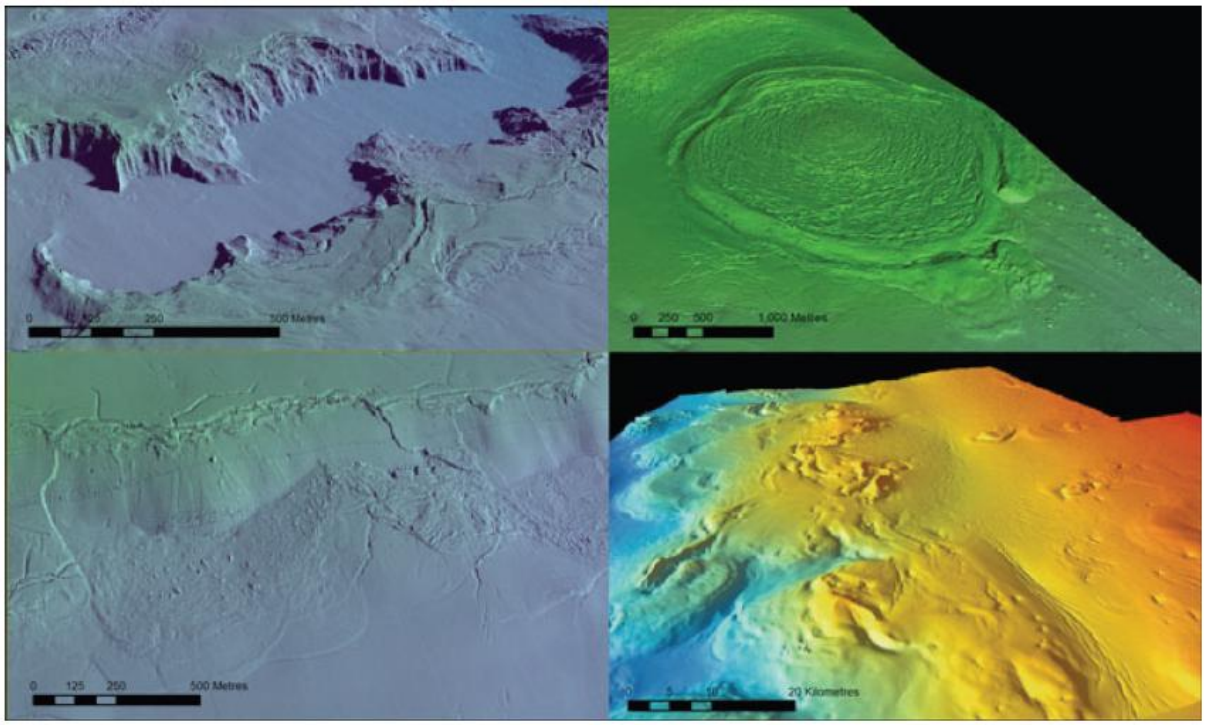
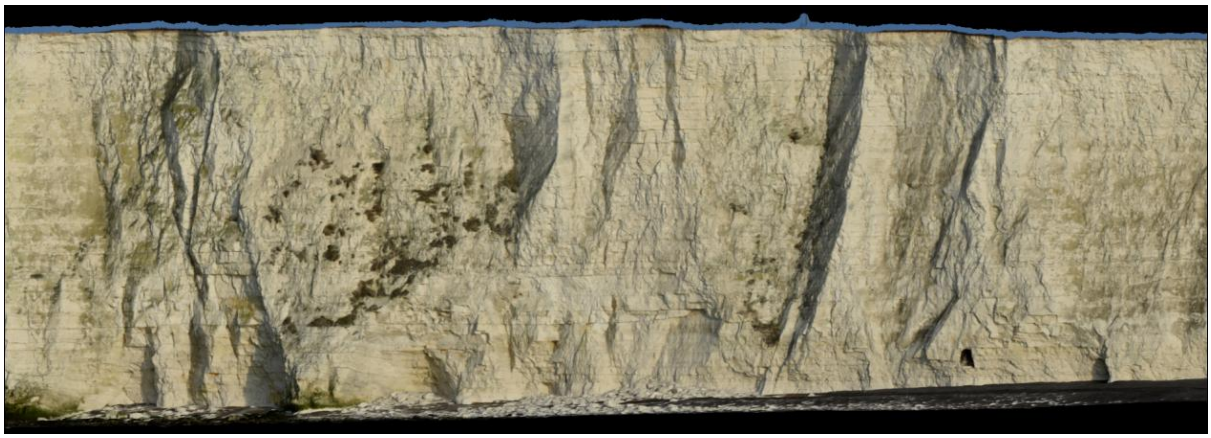
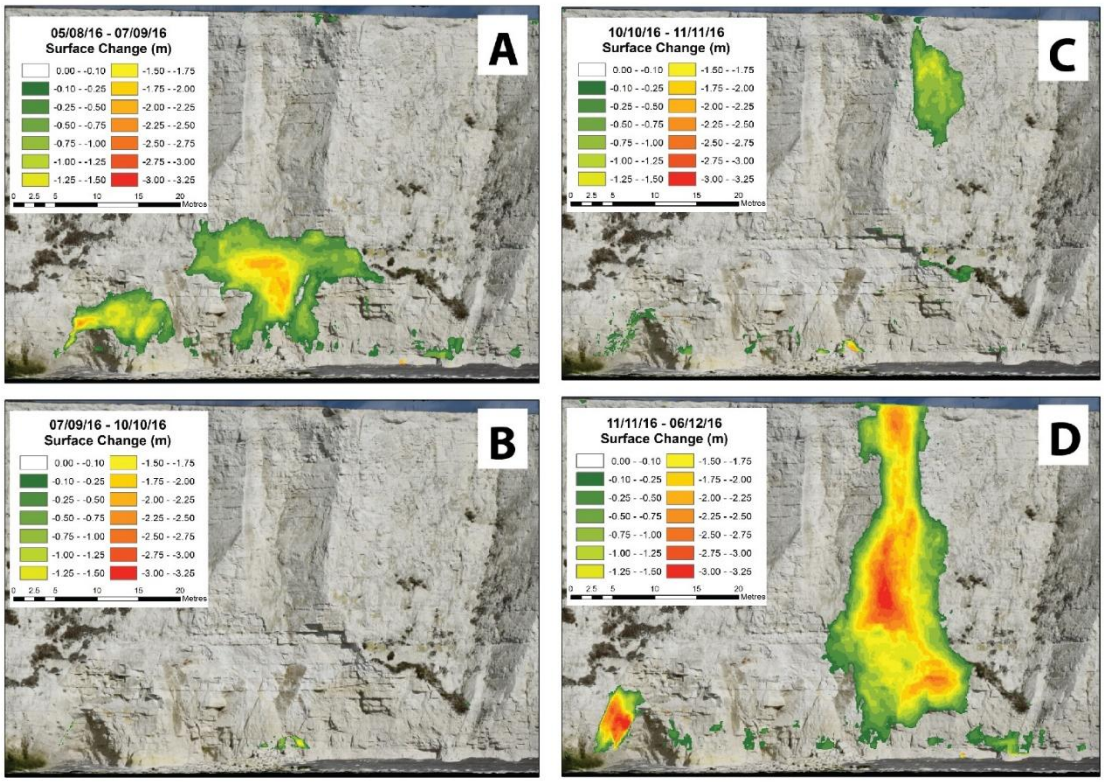
Abstract

Technological developments in recent decades have resulted in progressively higher resolutions of geospatial datasets, which present the geosciences community with an increasingly clearer representation of the Earth's surface. Included within this is the use of LiDAR (Light Detection and Ranging) to develop clear models of terrain, and of Unmanned Aerial Vehicles (UAVs) – more commonly known as drones – to collect data faster and in areas which may previously have been inaccessible. With the advancement in digital photogrammetry, Unmanned Aerial Systems (UAS) have been able to capture data at comparable resolution to terrestrial and aerial LiDAR but at a fraction of the cost. This has enabled geoscientists to analyse datasets captured more frequently to improve our knowledge and understanding of forms and processes operating in these previously remote environments.

Jamie and Oliver will be exploring these technologies: covering the method of capture, the opportunities and examples of deployment, the results and analysis of such data, using a diverse number of case studies to illustrate their versatility.







Oliver Dabson BSc (Hons) MSc FGS

Oliver is an engineering geomorphologist at Jacobs. In his 5-year career, Oliver has become a specialist in the application of geomorphology to the quantitative analysis of geohazards. His work involves using geomorphological assessment to evaluate the potential for landform change and adverse ground conditions, making use of detailed digital datasets and GIS techniques where available. Oliver has worked on several major infrastructure projects such as HS2, Oxford to Cambridge Highway and Lower Thames Crossing, as well as smaller projects for local councils and private clients.

Jamie Gilham BSc (Hons) MSc PhD

Jamie is a geospatial professional at Jacobs. His PhD utilised both terrestrial and UAV photogrammetry to produce 3D models of coastal Chalk cliffs which were used to develop a predictive model of sea cliff recession. Jamie joined Jacobs in early 2018 and has used his expertise in the capture of photogrammetric datasets and processing of point clouds to provide a variety of digital products to clients. Jamie has worked on the major infrastructure project Lower Thames Crossing, where he was responsible for generating a terrain surface and extraction of 3D assets from an aerial LiDAR survey for the pre-design stage.