



## **Østre Svartisen plateau icefield: changes in geomorphological and sedimentological signature in response to climate change**

Clare Boston (1), Harold Lovell (1), Paul Weber (1), and Benjamin Chandler (2)

(1) Department of Geography, University of Portsmouth, Portsmouth, UK (clare.boston@port.ac.uk), (2) School of Geography, Queen Mary University of London, London, UK

Plateau icefields constitute important independent ice dispersal centres both during past glacial periods and in present-day glacial environments. However, their imprint on the landscape is variable, owing to their polythermal nature: the distributions of warm- and cold-based ice, which can also change over time in response to climate fluctuations, leave behind starkly contrasting landform-sediment assemblages. This had led to difficulties in identifying plateau icefields in the Quaternary record due to the paucity of glacial geomorphological and sedimentological evidence for cold-based plateau ice. However, greater understanding of modern plateau icefield landsystems in areas such as Iceland and Norway in recent years has resulted in a number of former icefields being recognised in Britain (e.g. in Dartmoor, the Lake District, Southern Uplands and Monadhliath). In this contribution, we expand the range of modern analogues by investigating the geomorphological and sedimentological signature of Østre Svartisen, an Arctic plateau icefield in Norway, and discuss temporal variations in glacier dynamics and processes of sediment deposition in response to climate warming since the Little Ice Age (c.1750). This evidence helps to refine our understanding of plateau icefield signatures and aid identification of potential loci of former plateau icefield glaciation.