



Global glacial geomorphology

Jeremy Ely (1), Chris Clark (1), Chris Stokes (2), and Matteo Spagnolo (3)

(1) Department of Geography, The University of Sheffield, Sheffield, UK (j.ely@sheffield.ac.uk), (2) Department of Geography, Durham University, UK, (3) Department of Geography and Environment School of Geoscience, University of Aberdeen, UK

Mapping of glacial landforms has long been a cornerstone of glacial geomorphology, but it was not until the advent of remote sensing and GIS that widespread detailed mapping could be achieved. Using the examples of subglacial bedforms and the BRITICE project, I highlight how large databases of glacial geomorphological mapping can be used to: i) understand landform genesis; ii) reconstruct palaeo-ice sheets; and iii) validate ice sheet models. Arguably, glacial geomorphology has never been more useful. However, there is still room for improvement. Automated mapping techniques remain in their infancy. Yet, detailed remote sensing data at continental scales is becoming available, the scale of which is a daunting challenge for lone-manual mapping. Could machine learning hold an answer? Furthermore, completed work is often disparately stored and non-standardised. This leads to duplication of research and limits the utility of the collected datasets for future researchers. Here, I call upon the glacial geomorphological community to launch an open-access database of glacial geomorphological mapping on a global scale.