Geophysical Research Abstracts
Vol. 16, EGU2014-12926, 2014
EGU General Assembly 2014

Modelling runoff from the Chamonix catchment in the French Alps: Preliminary results and assessment of the uncertainty related to glacial retreat.

James Douglas (1), Matthias Huss (2), Darrel Swift (1), and Julie Jones (1)

(1) Department of Geography, University of Sheffield, United Kingdom (jdouglas1@shef.ac.uk), (2) Department of Geosciences, University of Fribourg, Switzerland

Climate changes are likely to cause significant modifications to the future runoff regimes of alpine catchments, therefore, modelling this behaviour is advantageous. However, accurately determining future glacier behaviour is complex and requires significant input data and computing power. As such, recent studies have used novel techniques in an attempt to predict glacier behaviour. Here, the Glacier Evolution and Runoff Model (GERM; Huss et al., 2008) is calibrated for the Chamonix catchment in the French Alps. An extensive validation procedure is conducted to compare modelled mass balance, discharge and volume change with relevant measured data. Initial results show that while the model is capable of accurately predicting runoff and glacier changes for a short time, longer timescales show more uncertainty. GERM is then used to predict runoff changes until 2100 incorporating the uncertainty calculated from the validation procedure.