Bachelor thesis: Trajectories of glacier lakes in the European Alps

Glacial lakes rank among the key diagnostics of climate-driven glacier retreat. Growing in remote Alpine headwaters, they can act both as a trap for sediment, and a viable source for freshwater and hydropower generation. Recent studies also highlight their role as a natural hazard, expressed in potentially destructive glacier lake outburst floods. However, while glacier lakes have been mapped for some selected Alpine catchments (e.g. Buckel et al, 2018), a systematic, multi-temporal and region-wide inventory of glacier lakes still remains elusive.

Source: Google Earth

The working group for natural hazards offers

one Bachelor thesis

to systematically analyse the distribution of glacier lakes in the European Alps in the past four decades. The thesis includes mapping glacier lakes from Landsat imagery in at least three time steps, and statistically exploring their spatial and temporal evolution. The ideal candidate will bring profound expertise in a GIS environment (ArcGIS, QGIS, SAGA-GIS, or equivalent), and basic skills in a statistical programming language (R, Python, Matlab, or equivalent).

Interested Bachelor candidates may contact Georg Veh via mail (georg.veh@uni-potsdam), telephone (+ 49 331 977 5875) or personally (House 1, Room 1.20) for further questions. Work on the thesis can start immediately.

Potsdam, 25 Sep 2019

Further readings: Buckel, J., Otto, J.C., Prasicek, G., Keuschnig, M., 2018. Glacial lakes in Austria - Distribution and formation since the Little Ice Age. Glob. Planet. Change 164, 39–51.