Was the last glaciation of the Black Forest (southern Germany) synchronous with the Alpine glaciation?

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Scientific context and approach

- During the last glaciation maximum, the southern Black Forest was covered by a 1,000 km² large ice cap dominated by radial ice flow from Feldberg (Fig. 1).
- Due to multiple moraines (Fig. 1), inside the last local glacial maximum glacier extent, its limited size and the lack of significant topographic control, the ice cap of Black Forest is a valuable palaeoclimatic archive.
- According to Monegato et al. (Fig. 2), growth of North American Ice Sheet → southward shift of the North Atlantic jet stream → advection of moisture from the Mediterranean Sea → enhanced ice build-up in the Alps.

Key site: Sankt Wilhelmer Tal

- Geomorphological mapping with particular emphasis on moraines based on new field evidence and high-resolution remote sensing data.

Future directions

- Geomorphological mapping of further sites.
- Application of modern geochronological methods to numerically date the last glaciation maximum and periods of glacier variability during the subsequent deglaciation: 10Be surface exposure dating of moraine boulders (Ivy-Ochs & Kober 2008) and dating with luminescence depth profiles from boulders buried inside terminal moraines (Rades et al. 2018).
- Palaeoglacier modelling, equilibrium line altitude reconstructions as well as determination of palaeo-precipitation and temperature together with data from the lake Bergsee record (southernmost Black Forest; Duprat-Oualid et al. 2017).

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References