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The timing of deglaciation on the northern Swiss Plateau inferred by cosmogenic ^{10}Be surface exposure dating

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During the Last Glacial Maximum (∼19-30 ka) extensive ice caps and large outlet glaciers covered the alpine valleys and forelands in the Swiss Alps (e.g. Ivy-Ochs, 2015). The former Rhône Glacier expanded onto the Swiss Plateau, was deflected and bounded by the Jura Mountain Range, and reached 'Wangen an der Aare' (Niederbipp Stade). Various studies have investigated respective glacial deposits, but the maximum extent of glaciation and the exact timing of deglaciation is still under discussion (Wüthrich et al. 2018, 2017). We investigated 18 additional samples from 15 erratic boulders from the region by cosmogenic ^{10}Be surface exposure dating to constrain the timing of deglaciation. The ^{10}Be exposure ages from seven different locations vary mainly between ∼17-30 ka. Five outliers show three younger ages (4 ka, 7 ka, and 10 ka, respectively) and two older ages (42 ka and 87 ka, respectively) than expected, proofing again that geomorphological processes and inheritance can affect the exposure ages of the erratic boulders.

Ivy-Ochs, S. (2015). Glacier variations in the European Alps at the end of the Last Glaciation. Cuadernos de Investigación Geográfica 41, 295–315.

Wüthrich, L., Brändli, C., Braucher, R., Veit, H., Haghipour, N., Terrizzano, C., Christl, M., Gnägi, C., Zech, R. (2018): ^{10}Be depth profiles in glacial sediments on the Swiss Plateau: deposition age, denudation and (pseudo-) inheritance, E&G Quaternary Sci. J., 66, 57–68.

Wüthrich, L., Garcia Morabito, E., Zech, J., Gnägi, C., Trauerstein, M., Veit, H., Merchel, S., Scharf, A., Rugel, G., Christl, M., Zech, R. (under review, 2017): ^{10}Be surface exposure dating of the last deglaciation in the Aare Valley, Switzerland. Swiss Journal of Geosciences.