Geophysical Research Abstracts
Vol. 21, EGU2019-7684, 2019
EGU General Assembly 2019


# The Last Glacial Maximum in the central southern Alps – first results from the Toce/Ticino glacier system

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Latest insights from paleo-climatic research (Luetscher et al. 2015) and glacier modelling (Seguinot et al. 2018) suggest that ice build-up during the Last Glacial Maximum may not have been uniform across the European Alps. Favoured by predominant precipitation patterns and a steep topographic gradient, paleo-glaciers on the southern side of the Alps are believed to have reached their maximum extent earlier than glaciers that drained north. While reliable glacial chronologies based on radiocarbon and exposure dates are available for several of the major Italian amphitheatres, the LGM glaciation of the central part of the southern European Alps is a clear lack of knowledge. The latter's connection to the major Alpine ice domes makes understanding the Ticino/Toce glaciers behaviour especially critical. The present study aims on filling this gap of understanding with detailed mapping of the Toce/Ticino glacier combined with cosmogenic nuclide dating.
A total of thirty rock samples for surface exposure dating has been collected from erratics deposited on the western shore of Lago Maggiore by the Ticino/Toce glacier. Preliminary Beryllium-10 results support an LGM extent larger than recently proposed (Bini et al. 2009). Next to LGM ages, the present data set together with field evidence also suggests a glacier re-advance following the LGM that ended with rapid down wasting of the glacier.

References

Bini et al. 2009, Federal Office of Topography, Swisstopo.
Luetscher et al. 2015, Nature Communications 7433.
Seguinot et al. 2018, Cryosphere 12, 3265-3285.