

Earth Surf. Dynam. Discuss., author comment AC1
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Reply on CC1

Benjamin Lehmann et al.

Author comment on "Alpine rock glacier activity over Holocene to modern timescales (western French Alps)" by Benjamin Lehmann et al., Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2022-8-AC1>, 2022

Comment on esurf-2022-8

Authors response to Community comment #1

Dear Community member,

Thanks for your interest in our work and for your helpful comments.

As suggested, the Egesen stadial (alpine counterpart of the Younger Dryas) was mentioned in Section 2. We thank you for mentioning CRE ages during the Early Holocene, this sentence has been added to the manuscript: "Based on surface-exposure dating of moraine deposits, glacial advances in the Ecrins Pelvoux massif have been identified from the Lateglacial to the Early Holocene (around 11ka, Hofmann et al. 2019)".

About the Sect. 5.4, the comments of the community member were included in manuscript. The part mentioned has been modified as such: "In a southern valley of the Ecrins Pelvoux massif, morainic deposits at Pré de la Chaumette (downvalley from Rougnoux Valley) have been dated at 12.5 ± 0.6 ka (Hofmann et al. 2019). Immediately after the onset of the Alpine glacier retreat (12.2 ± 1.5 ka in the same valley, Chenet et al., 2016), several advance episodes lasting ~ 1 ka were identified in the Ecrins massif. Dating in the south of the massif have shown glacial activity during the Lateglacial that may have lasted until the Early Holocene before final glacial retreat (around 11ka, Hofmann et al. 2019)."

Thanks a lot for your contribution!

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Cited references:

Chenet, Marie, Daniel Brunstein, Vincent Jomelli, Erwan Roussel, Vincent Rinterknecht, Fatima Mokadem, Melody Biette, Vincent Robert, and Laëtitia Léanni. 2016. "10Be Cosmic-Ray Exposure Dating of Moraines and Rock Avalanches in the Upper Romanche Valley (French Alps): Evidence of Two Glacial Advances during the Late Glacial/Holocene Transition." *Quaternary Science Reviews* 148: 209–21.
<https://doi.org/10.1016/j.quascirev.2016.07.025>.

Hofmann, F. M., Alexanderson, H., Schoeneich, P., Mertes, J. R., Leanni, L. & ASTER Team.: Post-Last Glacial Maximum glacier fluctuations in the southern Ecrins massif (westernmost Alps): insights from ^{10}Be cosmic ray exposure dating. *Boreas*.
<https://doi.org/10.1111/bor.12405>. ISSN 0300-9483