

Interactive comment on “LGM and Late Glacial glacier advances in the Cordillera Real and Cochabamba (Bolivia) deduced from ^{10}Be surface exposure dating” by R. Zech et al.

Anonymous Referee #1

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The authors report ^{10}Be ages of 28 boulders from 13 (?) moraines in three valleys in the Bolivian Andes, and they draw conclusions regarding: (1) the chronology of glacial advances/retreats; (2) the validity of different scaling functions and different calibration data sets; and (3) the paleoclimatic conditions at the time of moraine formation. These objectives are worthwhile. But the work is inadequate to make any conclusions because of the small number of samples. The moraines have between one and three samples, which is way too few. In addition, stratigraphic relationships, both within valleys and between valleys, are unclear, which adds to the problem. Had the stratigraphic relations been clear, and ^{10}Be chronology consistent with stratigraphy, as few samples as reported here could suffice. But the spread of individual ^{10}Be ages reported in

the paper is very large, indicating that the results cannot possibly be interpreted in a meaningful way. What the authors did was to guess which ages are good and base their further discussion on this guess.

The authors also discuss the validity of scaling factors and production rates. But the problem here is similar to that discussed in the previous paragraph. If in individual ^{10}Be ages show much spread, how can they be used to evaluate production parameters? It is guesswork again.

Likewise, the paleoclimatic interpretations cannot be based on the presented dataset because the chronology cannot be established based on the ^{10}Be data reported in the paper.

In conclusion, I consider the paper of poor quality; it should not be published.

Interactive comment on Clim. Past Discuss., 3, 839, 2007.

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