

Interactive comment on “Determining the Plio-Quaternary uplift of the southern French massif-Central; a new insights for intraplate orogen dynamics” by Oswald Malcles et al.

Anonymous Referee #2

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This paper presents original data on an interesting geomorphological subject where quantification is difficult and rare. The overall conclusion that South Massif Central has seen an incision and related uplift of about 80 m/Myr in the last 4 Ma, associated with a tilt toward the south is sound and deserves publication. However, the way the data is presented is far from satisfactory (missing information, hard to understand figures, neglected data without justification, etc., see details below) and thus I suggest important revisions to be performed before acceptance. English needs also significant improvement. I point a few points below. details“ $83.4+17.3/-5.4$ “ is too precise ! $83+17 -5$ is enough. ... Burial dating using Terrestrial cosmogenic nuclides (TCN) are nowadays : change are to is. Line 38 (and elsewhere): “can’t” cannot is more advisable.

Fig.1 lacks latitude longitude and some landmarks (even myself who works in the area was not sure to locate the main structures) like main rivers, cities, . . . A geological map could be useful. Also the localization of studied sites is poorly precised in this figure. Could they be also indicated in e.g. fig.9? Line 123-124: sentence needs a verb! Line 166-169 : strange practice to give results in the methods section (2.1) Please move them to section 2.2! Line 83±35 is enough precise. A table of paleomagnetic results with statistical parameters is mandatory. Fig.6 is hard to understand (especially not knowing how much paleomagnetic sites are available). I figure that on paleomag polarity is represented arbitrarily by a set of points fitted with chosen incision rate, allowing to see if the polarity is consistent with the scale, indicated as vertical grey strips. This is very badly explained! Line 219 “First, we note a good agreement between samples located at the same elevation,” I really don’t get how you derive such assertion! Line 223-225: about this reverse-normal sequence, there is no way to see it on Fig.6! Again the table is mandatory! You have to comment on the reverse polarity at ≈40 m that you assign to Brunhes period. Why not putting Matuyama there? Line 243: “Using a similar approach for the Rieutord crystalline samples,” I don’t get what you mean! How do you compute average dip and azimuth of your geomorphological surfaces? If it’s arithmetic mean, that not acceptable. You have to make it using directional statistics (and show us a stereogram of dip lines) Is Fig.9 all markers or only the robust ones? The second option (38 data; but I count 45 on fig.9!) seems right. But then the azimuths exhibit in fig.9 does not fit Fig.10. There are northward dips! Fig.10 scale “surface density” is a number of surfaces? Please make this clear.

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Discussion paper

