

## ***Interactive comment on “Controls on the magnitude-frequency scaling of an inventory of secular landslides” by M. D. Hurst et al.***

**D. Lague (Editor)**

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The reviewers agree that this paper presents interesting new results on the statistical analysis of a large landslide database. The key originality lies in the national scale of the database which makes it an interesting benchmark. The paper is also well written and clear, with figures of adequate quality. It should be published in Esurf at some point.

However, the two reviewers have pointed out that the statistical treatment of the data is not rigorous enough and that the interpretation are not fully supported by the data. In the present version, many of the interpretations tends towards the "arm waving" type, leaving aside other interpretations based on the dataset quality. These are less exciting, but need nonetheless to be rigorously explored. The authors have the benefit

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of two detailed reviews to improve these aspects in the revised version of their work.

Additional comments Eq (1) : please use a different notation for the number of landslides over the range of areas  $dA$  ( $NdA$  for instance). Otherwise eq. (1) reduces to  $Pd=1/dA...$  L14 : You present the two models, but the reader does not really why or how you have estimated the parameters of the pdf (which should be clearly detailed here). See comments by reviewers #1 and #2 Large-landslide deficit: your presentation is clearly biased towards the transient hypothesis. This is reflected in the abstract and conclusion. However, there is no a priori reason to discard the small-moderated size deficit in the database. I suggest to find a better balance in the presentation. As suggested by reviewer #1, better exploring the temporal aspects of the database could help. I think you could also have a quick analysis of changes in spatial density as a function of the geographical area. I'm particularly surprised by the low density of landslides in the Scottish Highlands compared to the Midlands for instance (around location of fig. 2 if my geography of the UK is correct). Apart from lithological differences, could there be a significant bias linked to population density that could impact the completeness of small/medium landslides in the NLD (given that population density is likely smaller in areas with hard rocks where there is fewer small/medium landslides per large ones in the NLD) ?

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