

Interactive comment on “Controls on the distribution of cosmogenic ¹⁰Be across shore platforms” by Martin D. Hurst et al.

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I have read this manuscript with strong interest as it can be viewed as a natural continuation of the paper we published in 2012. Many of the complications we thought to are here nicely addressed and I totally agree with the methods and conclusions of the paper. My only regret is that even if they focus on Sussex for tides and RSL there is no ¹⁰Be data from a natural shore platform. I am looking forward reading such data in a future paper.

I have just a couple of minor remarks.

The parameters of the beach cover are not explicit. How does a beach affect cosmogenic nuclide enrichment? Do you take a typical porosity and grain density? Is this shielding effect modulated by tides?

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In part 6.2 the authors plead for mapping downwearing rates over the platform. This is challenging but I think it is currently a very hard work. Another possibility could be through LiDAR scanning, but the time span between two campaigns must be sufficiently long to overcome the low downwearing rates. In Mesnil Val we acquired such a picture in 2008 and we wait... Other attempts of interest are the evaluation of block removal: this can give the typical thickness and the importance of the phenomenon (backwearing) on the total downwearing (see Dornbusch and Robinson 2011 and Regard et al. 2013).

Dornbusch, U., and Robinson, D.A., 2011, Block removal and step backwearing as erosion processes on rock shore platforms: a preliminary case study of the chalk shore platforms of south-east England: *Earth Surface Processes and Landforms*, v. 36, p. 661–671, doi: 10.1002/esp.2086. Regard, V., Dewez, T.J.B., Cnudde, C., and Hourizadeh, N., 2013, Coastal chalk platform downwearing modulated by step backwearing and debris shielding: example from Normandy and Picardy (northern France): In: Conley, D.C., Masselink, G., Russell, P.E. and O’Hare, T.J. (eds.), *Proceedings 12th International Coastal Symposium (Plymouth, England)*, *Journal of Coastal Research*, v. Special Issue No. 65, p. 1692–1697.

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