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Comment

# ***Interactive comment on “Analysing the spatial patterns of erosion scars using point process theory at the coastal chalk cliff of Mesnil-Val, (Normandy, Northern France)” by J. Rohmer and D. Dewez***

## **Anonymous Referee #1**

Received and published: 1 November 2014

Analysing the spatial patterns of erosion scars using point process theory at the coastal chalk cliff of Mesnil-Val, (Normandy, Northern France)

J. Rohmer and D. Dewez

This is a clear, well-written and innovative paper. The questions posed are clear and relevant, and the responses are convincing, and based on a sound analysis. I only have minor editorial comments or requests for corrections, which I list below.

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Title. Please consider “Analysing the spatial patterns of erosion scars using point process theory at the coastal chalk cliff of Mesnil-Val, Normandy, Northern France”

The Introduction is probably too long. The authors should consider splitting the Introduction in two parts i.e., the “real” introduction to the work, and a new section presenting background information and the review of the literature.

Page 6072, Question 1. At this point it is not clear if “heterogeneously” means at random. This is indeed clarified in Section 3.1, but it would be good to say something here, also.

Page 6073, line 17. (Mortimore et al, 2001) should be (Mortimore et al., 2001), with a “.” after “al” – Note that other similar typos are present throughout the text.

Page 6073, line 19. “(Fig. 1b” should be (Fig. 1b). In the same line, what is IGN? Please spell out.

Page 6074, line 18-19. “. . . is assumed to be related to a single erosion event.” The author should clarify if this assumption is realistic, or not, and what effect has on the analyses.

Page 6074, line 26. “Fig 1b synthesizes all scars on the cliff profiles at different measurement epochs”. This is not really clear to me looking at Fig 1b. The authors may consider improving the readability of this Figure.

Page 6075, line 1. Is this an empirical evidence from the available data? Unclear.

Page 6075, line 10, “(see caves at the base of cliff on Fig. 1a).” This is not really evident looking at Fig 1a.

Page 6076, line 1. “establish” ?? is this the right word?

Page 6076, line 24. “in a quasi-uniform manner”. Define this. Isn’t this also a result of the geometry of the system? The largest possible failures at higher elevations are necessarily smaller than the largest possible failures at the base of the cliff.

Page 6077, lines 2 & 4. No “circle” shown in Figure 3, and there are multiple arrows in Figure 3.

Page 6077, line 14. Clarify – only for the sake of clarity – if this is the geometrical or mass centroid.

Page 6078, line 12. . . . can be said to be “un-predictable”, in space.

Page 6081, line 13. “reference” should be “references”

Page 6082, line 23. For consistency, use “Supplementary materials” throughout the paper.

Page 6083, line 24. Here, and in other parts of the text, the authors use a different number of decimal digits for the same type of measurements. I presume that all measurements had the same accuracy. If so, all the measurements should be given with the same number of decimal digits.

Same place in the text: Do the authors have an idea why the thresholds are smaller for the summer and larger for the winter? Do they think the differences are significant?

Page 6084, line 4. “summer epoch” should be “summer epochs”?

Page 6084, line 5. Same as above on the number of decimal digits.

Page 6084, line 9. The statement of Rosser et al. (2007) is general i.e., it is valid “always” and “everywhere” or is it specific to this area?

Page 6084, line 19. “point location” should be “point locations”.

Page 6085, line 13. Consider deleting “Note that”, and writing “The non- rectangular shape . . .”

Page 6085, line 25. Consider “small than” instead of “inferior”.

Page 6086, line 12 “with a tide coefficient of 116.” Please, clarify the meaning of this figure.

Page 6087-6088. “This implies that calibrating that ...”. This is an important point. Does it mean that the power law scaling is controlled only by the geometry of the system?

Page 6088, line 14. Number of decimal digits.

Page 6089, lines 1-2. Triggers and predisposing factors might also be different in France and in Yosemite.

Page 6092, line 6, “pro?les” ???

Page 6092, line 16, “de?ection” ???

Figure 2. In the Figure you use A) and )B and in the caption (a) and (b). Be consistent. I personally prefer the labels used in the captions. Note that the same problem exists in other Figures.

Figure 3. The ellipses are confusing. Try using different colours.

Figures 4, 5 and other similar figures. Use “small” and “large” at the top, for improved readability of the figures.

Figure 6. Remove grid, add full year in the legend [and consider moving the legend in the caption], and use different colours. The existing colours are difficult to separate.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 6069, 2014.

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