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Comment

## ***Interactive comment on “Sea extreme events during the last millennium in north-east of Morocco” by O. Raji et al.***

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Comments on: Sea extreme events during the last millennium in North-East of Morocco  
nhess-2014-38

O, Raji. et al.

The study is addressing one of the most important issues in storm vulnerable area such as Mediterranean region. This manuscript is fairly written and structured. Authors imply a combination of scientific methods as well as provide moderate new dataset to identify paleoevents in a new study site.

Abstract Please mention the number of events identified by this method. Introduction

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The introduction part needs to be more elaborated with the general background on similar work. Authors should discuss some relevant previous studies focused on paleostorm reconstruction using sedimentological and geochemical proxies (e.g. Liu et al., 2003, Das et al., 2013). See the following references. Liu, K.B., and Fearn, M.L., 2000. Reconstruction of prehistoric landfall frequencies of catastrophic hurricanes in north-western Florida from lake sediment records. *Quaternary Research* 54, 238-245. Das, O., Wang, Y., Donoghue, J., Xu, X., Coor, J., Elsner, J., and Xu, Y., 2013. Reconstruction of paleostorm and paleoenvironment history using geochemical proxies archived in the sediments of two coastal lakes in NW Florida. *Quaternary Science Reviews*. v. 68, p. 142-153.

Study area Is the core collected from the center of the lagoon? If possible, provide the latitude/longitude of the coring site? Result and discussion Sediment source: Author tried to match the elemental composition of the barrier beach sediment with some previous studies, but didn't cite any references. Please add pertinent references. Although authors have used a number of geological proxies to identify storm events, but analysis of only one sediment core could underestimate the number of events, occurred in the past 500-600 years. It is always recommended to analyze more than one sediment core to establish the hypothesis. It helps to identify the maximum number of events occurred in the past and to minimize the analytical error. Calculate the recurrence interval or frequency of storm events (Time duration/ numbers of events). Identification of paleoevents Include the figure number (fig. 8). Storm or tsunami events About the use of geochemical signatures to distinguish between tsunami and storm deposits, no study was found.

This line below is suggested to add after the above sentence. "But it can be suggested that proxy records based on both overwash deposits and geochemical signatures is more sensitive indicator in identifying storm events than overwash deposit alone as it likely record any severe storms that were large enough to cause seawater flooding of the coastal lagoons (Das et al., 2013)."

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## General comments

In summary, I suggest the paper be accepted for publication with moderate revisions. At the same time, I rely on the feedback from the other reviewers and the editor. The work of the authors is a significant contribution to the scientific community. I also suggest that authors should check all the typo and grammatical errors throughout the manuscript.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C548/2014/nhessd-2-C548-2014-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 2079, 2014.

# NHESD

2, C548–C550, 2014

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