

Interactive comment on “Climate change and the demise of Minoan civilization” by A. A. Tsonis et al.

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This is a fascinating and well-written account of the possible contribution of natural long-term climate change (via prolonged drought) to the demise of Minoan civilization of Crete ~3.5K years ago. The authors present compelling evidence based on an impressive suite of data that includes meteorological observations, dynamical modeling and paleoclimate reconstructions that a drastic change in ENSO activity, possibly in concert with other stressors, caused this historical event of primary importance in the history of the ancient world. I read this paper with great interest and I think it is fully worthy of publication as a highly thought-provoking interdisciplinary paper made more relevant to contemporary issues by the changing climate of our day. It is well-researched and provides evidence supporting of the hypothesis from observations, multiple climate

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reconstructions and dynamical modeling by considering other consistent and relevant teleconnections of El Niño beyond those to precipitation in Crete.

The only major comment and suggestion I have is this: On figures 4 and 5 we clearly see that a change in ENSO activity of comparable magnitude and duration also occurred about 1000AD. The hypothesis presented in this paper will be made even more convincing if a similar decrease in precipitation in Crete and perhaps also other relevant teleconnected regions discussed here can be shown to have occurred also from about 1000AD lasting for several hundred years. It should be straightforward, for example, to check this in the reconstructions of Magill et al. (2005) and Moody (2005), both papers referred to here.

Minor comments are as follows:

1. The grammatically correct way to refer to El Niño in plural is “Los Niños”.
2. Here’s a relevant paper discussing nonlinear teleconnections of the El Niño signal to European climate with one important conclusion that stronger Los Niños do not necessarily lead to stronger signals. I will be glad to send a copy to the authors.

OrtizBevia, M., I. Perez-Gonzalez, F. Alvarez-Garcia and A Gershunov, 2010: Nonlinear estimation of El Niño impact on the North Atlantic winter. *Journal of Geophysical Research*, in press.

3. Page 807, line 27. Reference to Moody (2005) is missing.
4. It would be helpful to include a map outlining the coast on figure 2, so that Crete perhaps also Cyprus are clearly visible.

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