

## ***Interactive comment on* “Technical note: On the progress of the 2015–2016 El Niño event” by C. A. Varotsos et al.**

### **Anonymous Referee #1**

Received and published: 8 January 2016

Review of the manuscript entitled "Technical note: On the progress of the 2015–2016 El Niño event" by C. A. Varotsos, C. G. Tzanis, and N. V. Sarlis.

This paper presents and discusses an analysis of the Southern Oscillation Index time series in a new time domain called “natural time”. The authors use the entropy change defined in the natural time domain calculated for a window length of 20 months along with the receiver operating characteristics tool in order to investigate if the running 2015–2016 El Niño event is already or could become “one of the strongest on record” as recent reports indicate. They found that the 2015–2016 El Niño would be rather a “moderate to strong” or even a “strong” event and not “one of the strongest on record”.

The paper addresses relevant scientific questions within the scope of Atmospheric Chemistry and Physics journal. This manuscript is interesting because it presents a

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new method of analysis in climate physics that joins different fields of research and as deduced from the referenced literature it is well tested in time. Furthermore, the El Niño phenomenon and its impacts across the globe have attracted considerable scientific interest. The overall presentation is also well structured and clear, and the conclusions are substantial. Therefore, I recommend publication of this paper after minor revision.

Specific comments:

1. In Section 2, lines 23-24 (Page 35789): The authors mention that the method of analysis they used is based on the change of the entropy in natural time under time reversal calculated for a window size of  $i$  events. Although they give a few references on this subject, it would be useful for the reader to insert a brief description of “natural time” and “the entropy in natural time under time reversal”.
2. Page 35795: In Figure 1 the y-axis titles should be centered and parallel to the axis.
3. Page 35797: The same as before. In Figure 3 the y-axis titles should be centered and parallel to the axis.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 35787, 2015.

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