

Interactive comment on “Assessing large-scale weekly cycles in meteorological variables: a review” by A. Sanchez-Lorenzo et al.

Anonymous Referee #1

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Minor Comments:

This paper is a very thorough and most updated summary on the current understanding of the weekly cycles in meteorological variables. The reviewer enjoyed reading the article. There are a few minor comments that the reviewer wants to make.

1. P. 1456, L. 21-22: “This implies that the WC is a large scale phenomenon, although it also has a clear distinct large-scale pattern.” This sentence is unclear and should be rewritten.

2. P. 1463, L. 6: and Roh (2010)

3. P. 1464, L. 24-25: “neglecting “spatial auto-correlation while assessing the statistical significance of the merged time series” I agree with this statement of Hendricks-

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Franssen (2008). Considering temporal and spatial covariance structures also help us understand the physical nature of weekly cycles in meteorological variables. I think that this statement is worth repeating in the conclusion.

4. Conclusion: Improvement of statistical tests is important to validate (or invalidate) weekly cycles in meteorological variables. In my opinion, however, it is extremely important to first understand the physical nature of weekly cycles, if any, in meteorological variables. Kim et al. (2010) paper is a clear indication that natural weekly cycles exist despite seemingly variable phases of those cycles. A typical dataset may not be long enough to eliminate natural weekly cycles completely. Then, statistical significance of weekly cycles, particularly in regard to an anthropogenic origin, does not make much sense. It is the reviewer’s opinion that a significant improvement should be made in both physical and statistical approaches to weekly cycles. In order to look at the physical nature of weekly cycles, spatial and temporal covariance structures should be examined simultaneously.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1451, 2012.