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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Erythemal ultraviolet irradiation trends in the Iberian Peninsula from 1950 to 2011" *by* R. Román et al.

Anonymous Referee #2

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To begin with, I want to acknowledge the editor and the authors that I am currently also reviewing another manuscript by the same authors submitted to Atmospheric Research (title: "Comparison of nine different models to reconstruct erythemal ultraviolet radiation").

These two manuscripts are connected in the following way: the manuscript submitted to Atmospheric Research (denoted #1) presents and compares models for reconstructing UV radiation, while the present manuscript (denoted #2) presents an analysis of the resulting UV time series, calculated using two UV reconstruction methods included in #1, over the Iberian peninsula since 1950.

My main concern, which I already mention in my initial quick review, is that there may

be overlap between these papers by the same authors.

In principle, it could be possible to keep these two manuscripts apart and publish them as separate papers. However, if they are to be published separately, the authors need to make it perfectly clear what has been done in each paper and how the papers connect to each other, why each of the paper is needed and what their respective scientific contribution is.

Manuscript #2 (this review) is still not clearly explaining the differences and connections to manuscript #1. Sections 2 and 3 include lengthy passages which are more or less the same in both manuscripts. This is not acceptable.

Another important concern with this manuscript (#2) is the use of the open body fraction. I agree with the other reviewer that it is not clear how to interpret the open body erythemal UV series. If the open body UV is to be included in the study, it would require much more motivation, background, and discussion on why it is a useful quantity, for example, for epidemiological studies.

As mentioned in my previous review, there is also a need to consider more carefully what really can be concluded based on the work presented. Example: how much can be concluded about the role of aerosols and clouds from the reconstructed UV series which is based on climatological aerosols as input?

Finally, I find that some parts of the manuscript are difficult to read and would therefore benefit from language checking and additional checks on the preciseness and logic of the expression (one example: section 2.2 introduces the data used, but it is often not clear whether the values have been used to create a monthly climatology or as a more realistically varying time series).

Because of the overlap between #1 and #2 it is difficult to give a standard recommendation on the scale minor / major revisions / rejection. In any case, the manuscript(s) require more work before publication.

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Interactive comment on Atmos. Chem. Phys. Discuss., 14, 15545, 2014.

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