

## ***Interactive comment on “Potential evaporation estimation through an unstressed surface energy balance and its sensitivity to climate change” by A. Barella-Ortiz et al.***

**E. Blyth**

emb@ceh.ac.uk

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This paper tackles an interesting and somewhat unexplored subject: the way that potential evaporation has changed and will change as the climate shifts. The subject is difficult to tackle as the definitions of PE (Potential Evaporation) vary within the literature and this can make it difficult to assess the reality (given that it isn't real!). However, the authors found a way through the maze and presented a good assesment of the subject. I therefore think the manuscript should be published. However, it was a little difficult to read as sometimes the language strayed into french-english (the grammer is not quite tight enough. Aim for shorter sentences). Secondly it is very long, with long

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descriptions of the different cases. Is it possible to shorten it? Keep the presentation to the essential story. Clearly there is a good reason to keep PE defined as that pertaining to a single land cover (e.g. the FAO definition). In your analysis however, you ensure that the land cover varies in a realistic way, which gives a different product to the FAO, which only depends on the meteorology, not the land cover. You should mention that different definitions of PE have different purposes. You might also mention the fact that, as CO<sub>2</sub> increases, these definitions of PE might go out of date as the base-line value of R<sub>s</sub> might change as the vegetation adapts to the fertilisaion effect. You don't need to make any analysis, but you need to show you understand the issues about defining PE in certain way.

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