



# ***Interactive comment on* “Total Global Solar Radiation Estimation with Relative Humidity and Air Temperature Extremes in Ireland and Holland” by Can Ekici and Ismail Teke**

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First of all many thanks to the all reviewers for their precious comments.

Revised manuscript is given in supplements.

Response to the reviewer is given below.

Reviewer: Some details can be removed, for instance the function of weather institutes (lines 58- 67).

Answer: Details about meteorology institutes were removed from the manuscript.

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Reviewer: Furthermore, results for some locations can be merged in a single table by putting each location in one column (tables 3, 5, 7, 9).

Answer: Table 3, 5, 7, 9 were merged in Table 3. Results of the all locations are given in one table.

Reviewer: The conclusion brings some explanations about results of part 5. These explanations are needed to be written in part 5. Particularly, explanations about error estimations should be moved to part 5 with the tables of results.

Answer: Explanations about error estimations given in the conclusions section were moved to section 5.

Reviewer: The explanation of over evaluation of solar radiation during clear days and lower estimation during cloudy days should be moved to the results page and developed.

Answer: Explanations about clear days and lower estimation days were moved to the end of Results and Discussion section.

Reviewer: How they authors planned to address nebulosity in their model (see some approaches in literature) ?

Answer: Ben Jemaa and others (2013) used nebulosity measurements to construct the cloud attenuation factor, which was then integrated to obtain the average total amount of monthly energy received. Daily temperature variations can reflect the cloud attenuation. Models given in the manuscript used the differences between maximum and minimum temperatures.

Reviewer: Figure 1 has to be completed with units on the axis (Units of the vertical axis (a priori MJ/d/m<sup>2</sup> ) ), axis position revised and data original location need to be specified.

Answer: The data given in the Figure belongs to Eindhoven. Information on this was

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added to the text and Figure. Units of the vertical axis were added.

Reviewer: Some explanations about tables of part 5 can moreover be highlighted by adding a synthesis of the evolution of weather conditions over the studied month on a new figure. Evolution of relative deviation and pertinent error estimators should be added on another figure.

Answer: A new figure was added for weather conditions about given month. Comments were added about weather conditions.

Reviewer: All the studied locations have similar oceanic climate. It should be interesting to compare models for other climates (warmer as Mediterranean or tropical, dry as continental).

Answer: Results for other climate types can be a new issue for a future study. Results of this study can be compared with applications in Mediterranean areas in a new study.

Reviewer: About the form, written English can be enhanced. Mathematical notations need to be written in italic in text.

Answer: English language copy-editing for final revised paper is included in the APC. Copernicus declared this on their web site. Mathematical notations were written in italic text.

Please also note the supplement to this comment:

<https://www.geosci-instrum-method-data-syst-discuss.net/gi-2017-52/gi-2017-52-AC2-supplement.pdf>

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Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss.,  
<https://doi.org/10.5194/gi-2017-52>, 2017.