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Geoscientific Instrumentation Methods and Data Systems Discussions

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

Anonymous Referee #1

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This article deals with new correlations to estimate the solar radiation from two standard weather data (air temperature and relative humidity). After presenting some available models in literature, the authors proposed new models. Results for some locations in Ireland and Netherlands show an improvement of the accuracy of the estimations. A lot of correlations were presented in previous articles [Menges (2006)]. The main contribution of this paper compared to previous publications comes from the association between air temperature and relative humidity to estimate solar radiation over daily or monthly periods. This articles has some paragraph that can be more synthetized. Some details can be removed, for instance the function of weather institutes (lines 58-67). Furthermore, results for some locations can be merged in a single table by putting

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Discussion paper

each location in one column (tables 3, 5, 7, 9). 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. 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. How they authors planned to address nebulosity in their model (see some approaches in literature) ? Figure 1 has to be completed with units on the axis (Units of the vertical axis (a priori MJ/d/m^2)), axis position revised and data original location need to be specified. 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. All the studied locations have similar oceanic climate. It should be interesting to compare models for other climates (warmer as Mediterranean or tropical, dryer as continental). About the form, written English can be enhanced. Mathematical notations need to be written in italic in text.

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