

Interactive comment on “Performance of the meteorological radiation model during the solar eclipse of 29 March 2006” by B. E. Psiloglou and H. D. Kambezidis

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We would like to thank Referee #2 for his/her constructive and helpful comments. Our response is given point by point.

Comment 1: "The abstract would provide some details about the numerical results of the comparisons between measured and simulated data."

A paragraph giving the main numerical results of the comparisons between measured and simulated data has been added in the abstract of the revised version.

Comment 2: "The paper does not explain the methodology used to correct the measured diffuse data."

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No shadow-ring correction was performed on the measured diffuse radiation data. The reason is that several correction methodologies exist in the international literature. They show differences among them if they apply to the same data set. To find the best methodology for specific solar data, one has to use the diffuse component as the difference between the total and the direct-beam ones. This implies the availability of a pyrheliometer at the station. Since this was not the case for ASNOA until one month ago, no attempt to correct the diffuse-measured values has ever been made. Nevertheless, this will be the goal after the collection of at least one year's solar data at ASNOA. Such a statement has been added in the revised version.

Comment 3: "... it will be necessary to evaluate RMSE and MBE in Wm^{-2} also and to show another statistical estimator as histograms, frequency distributions of both data series, measured and simulated."

Table 5 has been modified in the revised version and gives now the statistical estimators of RMSE and MBE in both Wm^{-2} and % of the measured mean values. Also two new equations are added (eqs (34) and (35)) for expressing RMSE and MBE in %. Further, as the reviewer has requested, two new Figures (5a, 5b) have been prepared and included in the manuscript. They present the frequency distribution of the differences between the measured total or diffuse radiation components and the respective MRM-estimated ones. Relevant discussion of these findings is done in the text.

Comments 4 and 5: "Comments about the results shown in Figures 4 and 5."

Discussion about Figures 4 & 5 of old version (now Figures 4a,b) is made in the new version of the manuscript describing the behavior of the diffuse component mainly. This discussion is coupled with the RMSE and MBE statistical results.

Comment 6: "Comments about the results shown in Figure 6."

Figure 6 in the old version has been replaced by Figures 6a,b. Comments about the best-fit curves to the data points and the coefficients of determination for both dates

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are made in the text. Even these results prove the efficiency of the MRM code.

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