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Atmospheric Measurement Techniques Discussions

Interactive comment on "Solar irradiances measured using SPN1 radiometers: uncertainties and clues for development" *by* J. Badosa et al.

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General comments: I find the paper technically correct and of interest to the many users of this instrument. Since it uses many different sites with different climate types it points out the range of differences to expect in measuring GHI, DHI, and DNI. I think the range of differences to the estimated quantities is a good indication of the best uncertainties that one can expect with some careful re-calibration of the instrument once it is received from the factory.

There should be a description of TBM measurements so that we have confidence that the usually errors associated with these measurements are not contributing to the differences seem. For example, one major concern of this referee is whether offsets are

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corrected for TBM DHI measurements?

p. 8151, line 3; I would disagree with high maintenance costs and frequent and complex . . . since we usually just have to clean instruments, which I am sure you have to do for the SPN1

p. 8151, line 19; How does one get +/-8% to equate to +/- 10 Wmˆ-2

p. 8154, lines 24 (for example) “Data were” should replace “Data was” throughout the manuscript.

Fig 2 caption should read SPN1 vs TBM

Fig 3 I do not understand the peak in the negative sector in the rightmost frame since Fig 2 seems to have most SPN1 points higher than the TBM points.

In meteorology azimuth is measured clockwise from north, e.g., east would be 90 degs; it seems that you have chosen to measure azimuth counterclockwise

Section 5.1.2, Please, add an figure for this dome lensing effect that explains why nearer (to sun direction detectors have higher response and vice versa.

p. 8163, line 28; I do not think the sureole brightness and extent depends on water vapor

p. 8164, lines 4-6; Please clarify this statement. Are you suggestions the DHI between 0.266 and 2.5 equals all of the rest of the DHI?

I find “Modelling of SPN1 effective aperture” difficult to understand. Perhaps, an illustration explaining “first touch angle” would help.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 8149, 2014.