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Atmospheric Measurement Techniques Discussions

Interactive comment on "Development of a digital mobile solar tracker" *by* S. Baidar et al.

Anonymous Referee #2

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General comments

This manuscript describes the development of an impressive mobile solar tracker that should enable the authors to successfully characterize outflow from urban regions and discrete sources. The increase in signal strength via direct solar observations is well worth the effort expended to develop this system. I am impressed by the improvement achieved by their method of accounting for the platform motion during the control loop interval.

I agree with all of the corrections suggested by reviewer number one, and I propose a few additional changes.

Specific Comments:

Section 3.1: I believe the authors need to further address the percentage of time that

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the signal is completely lost from the camera-based feedback system. How quickly can the system reaquire a signal after loss? How do you filter the data to account for this loss of signal? If a measurement takes 2 seconds (11409 L 26) and you are losing signal every 3 to 4 seconds (11413 L 6) than I believe that this needs to be addressed more fully in the text.

Figure 7C: There are missing MAX-DOAS points during what appears to be a fairly significant change in signal as measured by the direct sun measurements. Why is this? I believe this warrants a comment in either the figure caption or text.

Technical Comments:

Mostly minor grammar suggestions.

Page 11403 L16: change EA to EAs.

Page 11405 L5: rewrite "2 in f/4" to avoid confusion.

Page 11406 L23: change "in the FOV" to "into the FOV"

Section 2.1.1: you state that the choice of using a circle of ellipse fitting routine is based on the location of the solar disc – but it is unclear how you originally determine the location of the solar disc without first performing a fitting routine.

Page 11413 L21: "requiring" to "require"

Page 11415 L19: "direction" to "directions"

Figure 4: Please carefully confirm order of panels in the figure / caption.

Figure S1: Little is gained by extending this figure out to 200 pixels.

Figure S3: Consider adding the 1 sigma deviation from the text directly to this figure.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 11401, 2015.