

Interactive comment on “Performance of a mobile car platform for mean wind and turbulence measurements” by D. Belušić et al.

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We thank Prof Bange for his encouraging comments. The responses to his specific and technical comments are given below, marked with **R**.

First paragraph of section 2.2, equation (1). Can you estimate the systematic error added to the wind vector in the coordinate system of the car caused by installation errors? For instance the influence of 1 degree misalignment between the GPS-INS and the sonic systems?

R: The GPS-INS is attached directly to the head of the sonic anemometer, so that the possibility of misalignment between the two is minimal. However, if we allow for misalignment, the relevant angles are α_z and α_y , which are the misalignment angles

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due to rotation around z_{car} and y_{car} , respectively. The systematic error is proportional to $V_{sonic} \sin \alpha_z$ for the v_{car} component and $V_{sonic} \sin \alpha_y$ for the w_{car} component, where V_{sonic} is the car-relative flow speed. The effect of misalignment on the u_{car} component is negligible. Taking $\alpha_z = \alpha_y = \alpha = 1^\circ$, which we consider to be larger than the actual misalignment angles, and $V_{sonic} = 20 \text{ m s}^{-1}$, we get $\Delta v_{car} = \Delta w_{car} \approx 0.35 \text{ m s}^{-1}$. However, since this is a systematic error, it would be corrected by the two corrections described in section 4.1 for the two components, respectively. This is now discussed at the end of section 2.2.

The diagrams 4 to 9 are much too small. It is not possible to identify the individual curves, symbols etc.

R: The diagrams were optimised for the final AMT portrait orientation, while the Discussion paper is in landscape. We will carefully inspect the paper in the final format, and if the diagrams are still too small, they will be modified.

Reference S. Martin et al., 2011: It is $M^2 AV$ not $M_2 AV$ (see for comparison van den Kroonenberg et al., 2008.)

R: Corrected.

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