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Supplement of

Performance of a mobile car platform for mean wind and turbulence measurements

D. Belušić et al.

Correspondence to: D. Belušić (danijel.belusic@monash.edu)

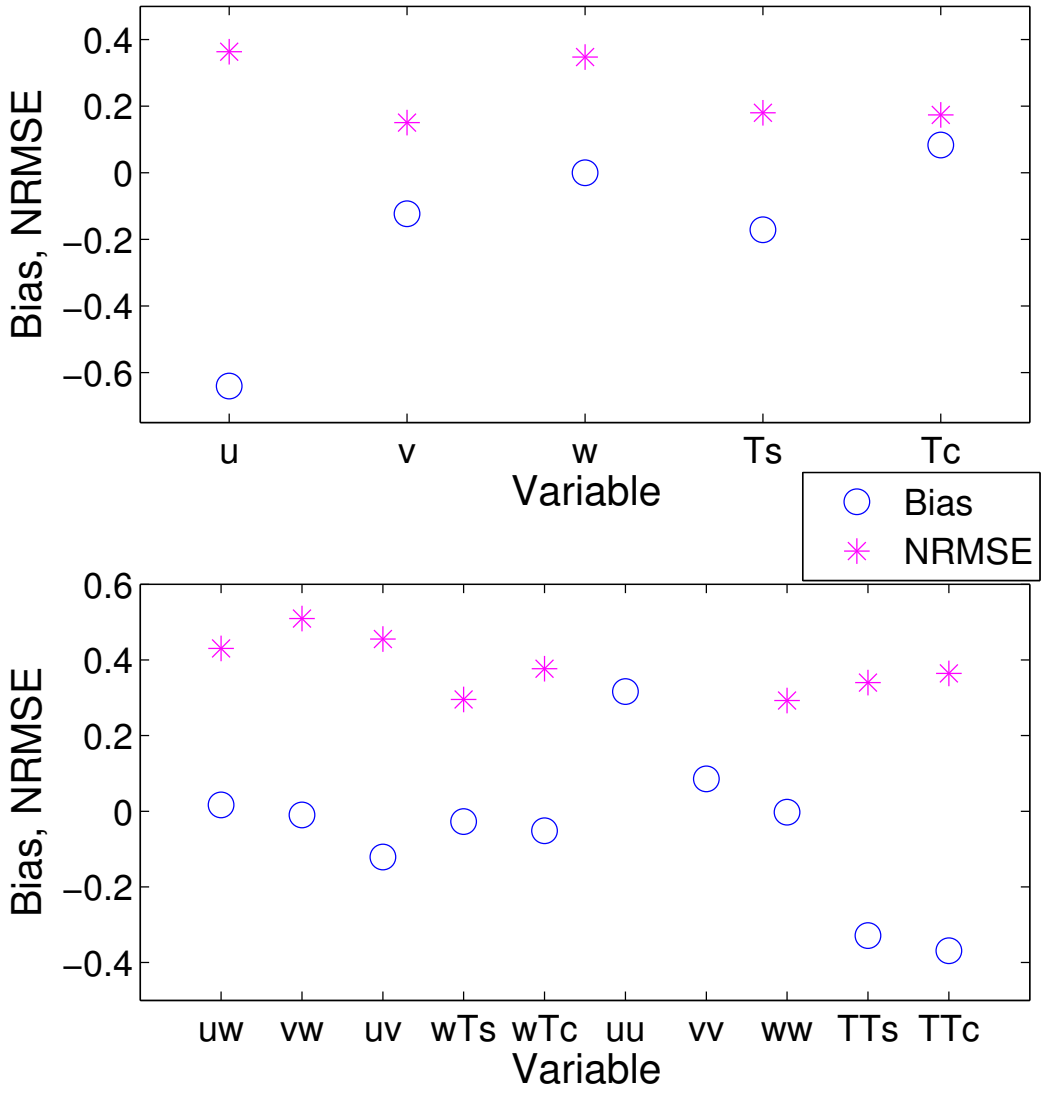

Figure 1: Bias and normalized root mean squared error (RMSE) for mean (top panel) and turbulence (bottom panel) variables. The RMSE is normalized by $x_{max} - x_{min}$, where x represents the variables shown in the figure. Ts and Tc stand for the sonic and thermocouple temperature, respectively.

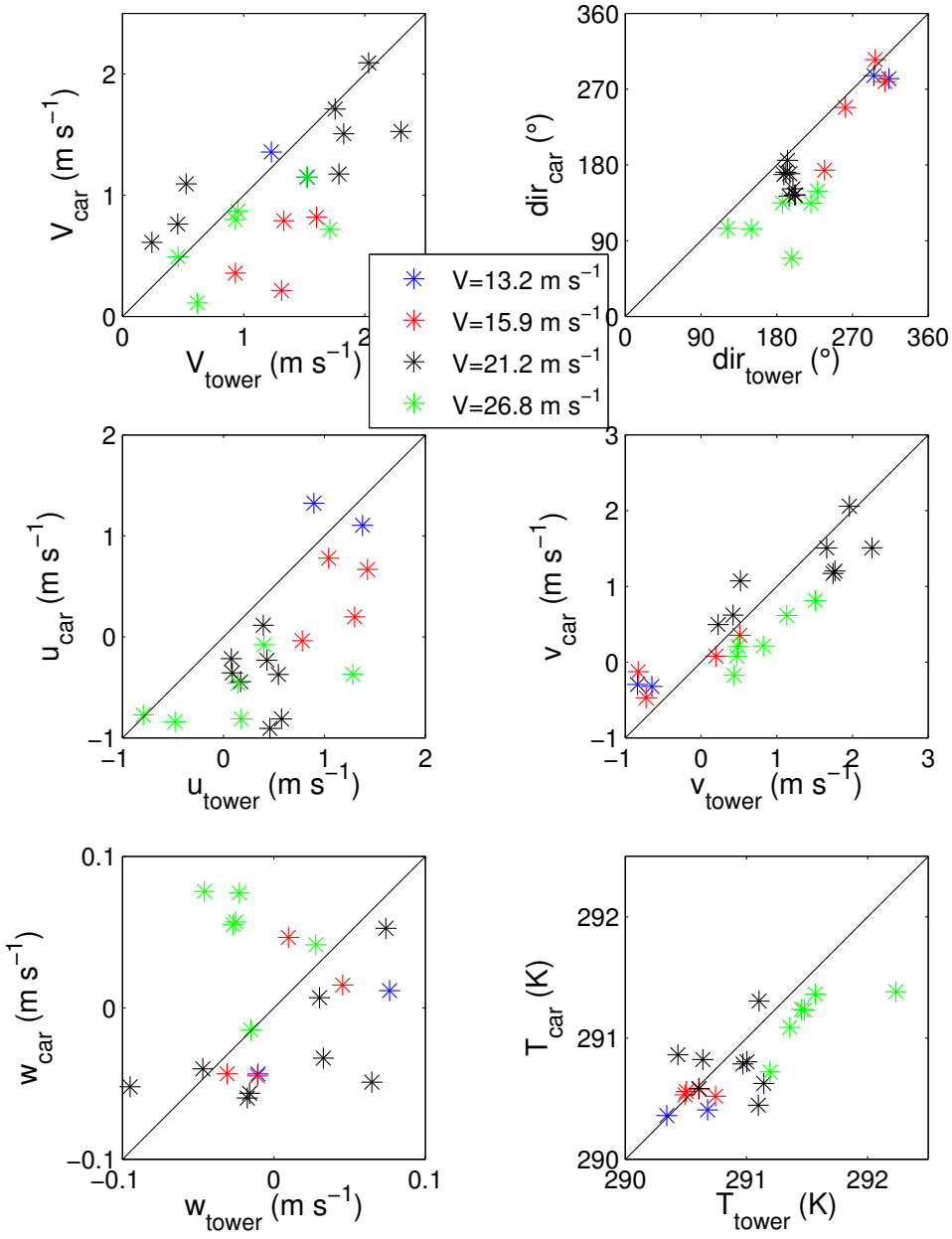

Figure 2: Scatter plot of tower vs. car mean variables: vector-averaged wind speed (V), wind direction (dir), eastward (u), northward (v) and vertical (w) wind components, and sonic temperature (T).

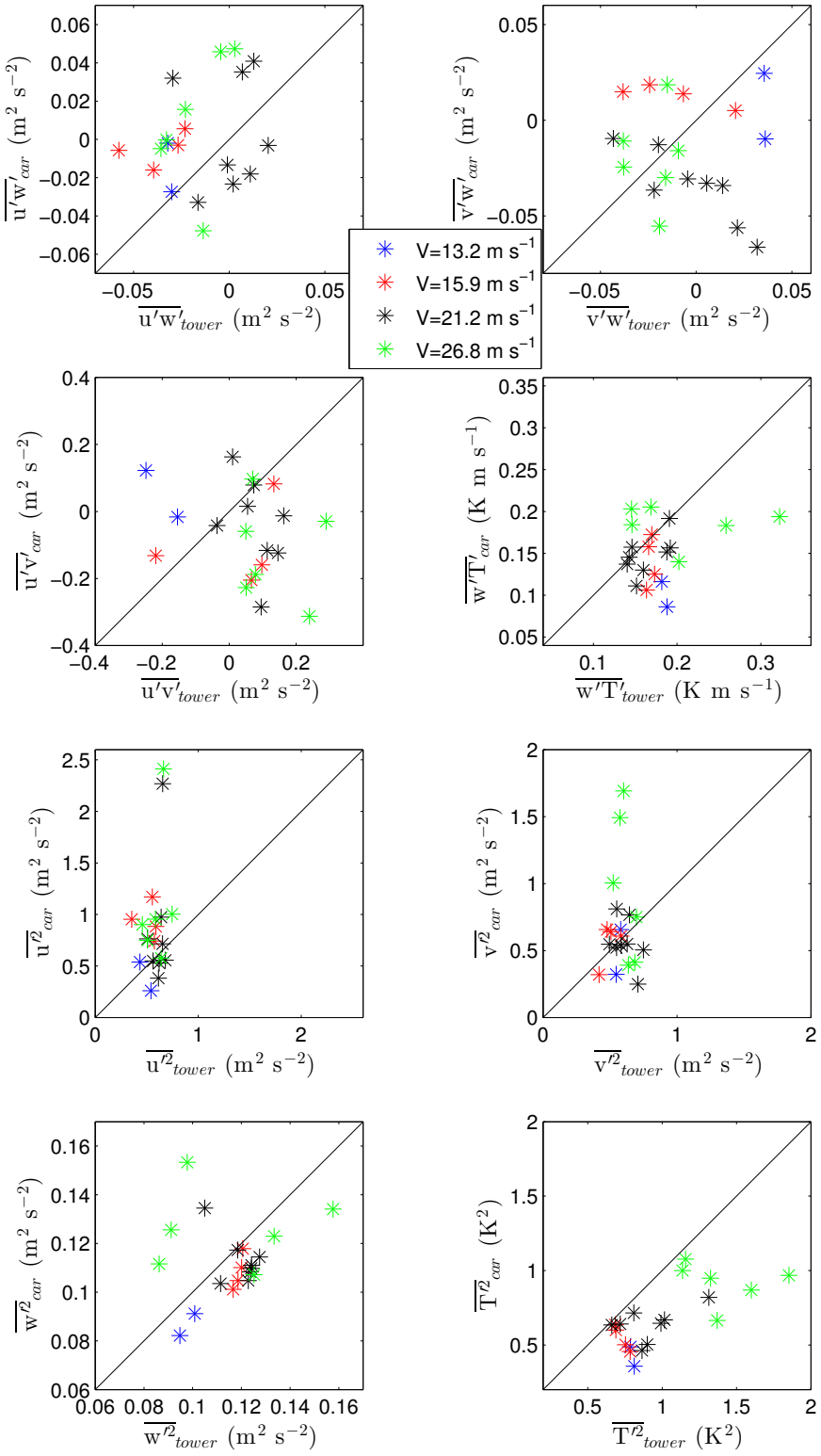

Figure 3: Scatter plot of tower vs. car fluxes and variances. Averaging interval for the tower data is 10 min. The sonic temperature is used for calculating fluxes and variances.

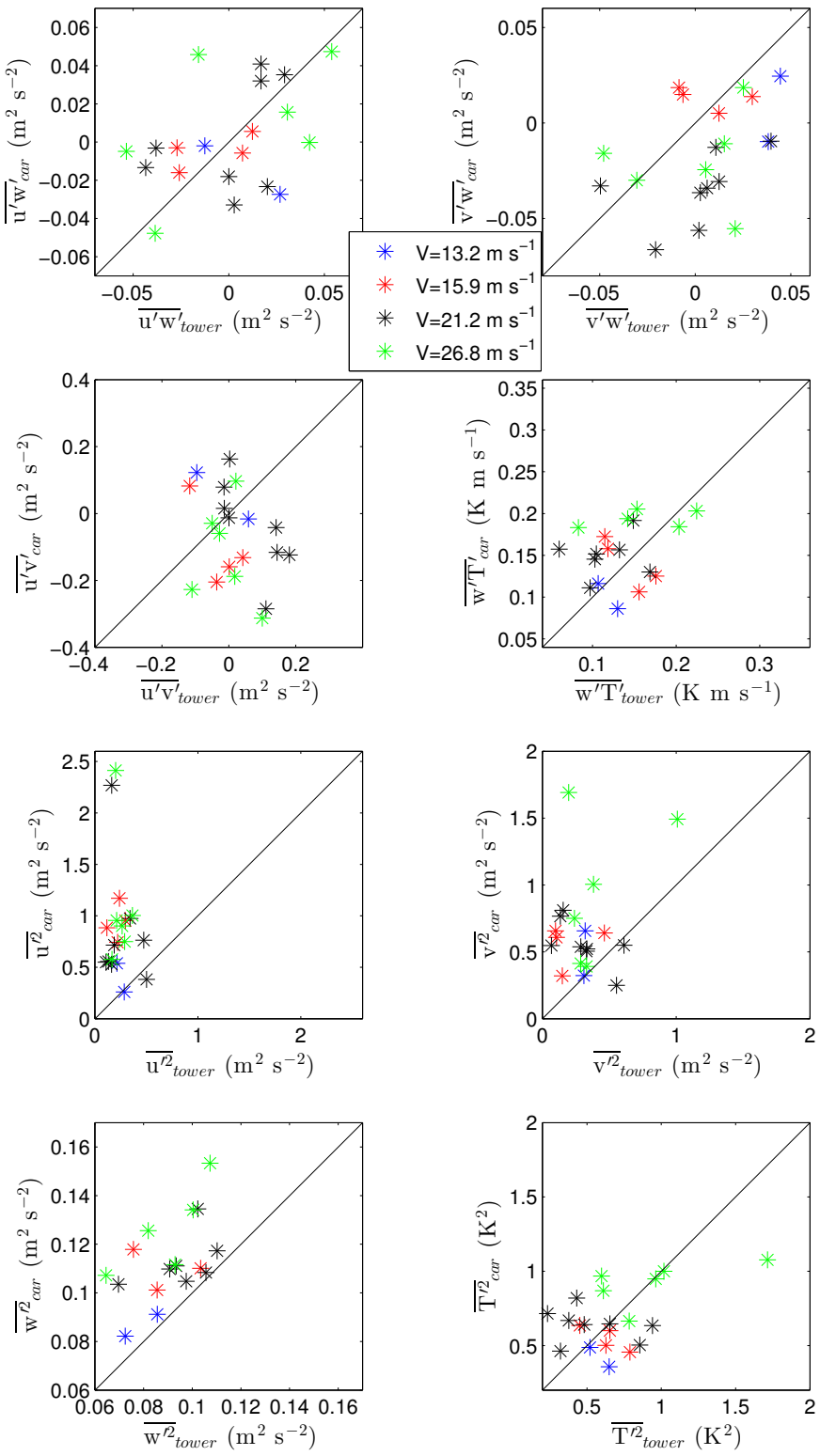

Figure 4: As in Fig. 3, except that the averaging interval for the tower data is 2 min.

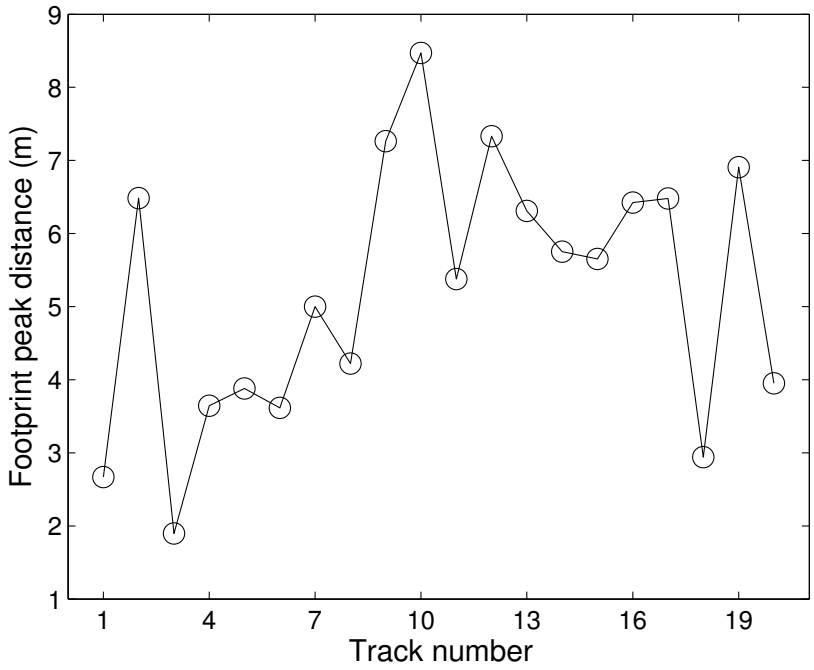

Figure 5: Distance of the footprint peak for each car track. The footprint is calculated according to Hsieh et al. (2000).

References

Hsieh, C.-I., Katul, G., and Chi, T.-W.: An approximate analytical model for footprint estimation of scalar fluxes in thermally stratified atmospheric flows, Advances in Water Resources, 23, 765 – 772, doi:10.1016/S0309-1708(99)00042-1, 2000.