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Atmospheric Measurement Techniques Discussions

Interactive comment on "Using sonic anemometer temperature to measure sensible heat flux in strong winds" *by* S. P. Burns et al.

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We thank Erik Sahlée for pointing out the papers by Grelle and Lindroth (1996) and Smedman et al. (2007) that have shown similar issues when computing the sensible heat flux with Gill SOLENT sonic anemometers in high winds. (In addition, Georg Wohlfahrt made us aware that Aubinet et al. (2000) discusses these same heat flux issues and Figure 4 from Grelle and Lindroth (1996) is reproduced in Aubinet et al. (2000).)

We note that there is a difference between our results with the CSAT3 and what was found previously with the SOLENT. We found the CSAT3 sensible heat flux tended to be more positive than the thermocouple heat flux as windspeed increased for all stabilities, whereas the SOLENT sonic heat flux tended to be larger in *magnitude* than the

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heat flux from the Pt wire (e.g., under stable conditions the CSAT heat flux was closer to (or above) zero while the SOLENT heat flux tended toward a larger negative value). We would not necessarily expect the two sonic anemometers to behave similarly (because the CSAT3 and SOLENT have very different geometries, firmware, etc), but it is interesting to note that they behave in the opposite way under stable conditions.

We regret not including these three papers in our submitted paper, but they will certainly be included in any future versions of our paper along with an appropriate discussion.

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