

Geosci. Instrum. Method. Data Syst. Discuss., referee comment RC1
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Comment on gi-2021-31

Mike Molyneux (Referee)

Referee comment on "Measurements of natural airflow within a Stevenson screen and its influence on air temperature and humidity records" by Stephen Burt, Geosci. Instrum. Method. Data Syst. Discuss., <https://doi.org/10.5194/gi-2021-31-RC1>, 2022

General comments

The paper is directly relevant to many locations where timeseries of temperature measurements are made around the world. The work examines an underpinning assumption of one of the common methods of air temperature measurement. The conclusion is useful, and helps add to both improvements to these timeseries in future and to assessing the uncertainty of measurement in the past. The method and assumptions are clear so that the results can be highlighted robustly. There is a good list of relevant references and credits and the papers title accurately reflects its content and it has a suitable abstract. The presentation is clear and language used is appropriate. The formulae are correct and no parts of the paper need to be removed.

Specific comments

Figure 8 shows an interesting case but might benefit from some discussion of manual observing practices and/or quality control. In the case of having a person observe the readings (now or in the past) they will take special care if the wet and dry bulb values are close to each other and will be suspicious when the wet bulb reading is above the dry. There will have been many occasions when a sudden temperature drop could have occurred and yet I know of no special processes for treatment of errors as large as the maximum case shown. Anecdotally this suggests it wasn't a common problem, although it may be related to the opening of the door required for a human to read the values.

Discussion of anemometer performance approx line 143

The anemometer will measure the resolution quoted by the manufacturer, but very low wind speed performance may be assumed rather than tested. While this is unlikely to have a significant impact it could be discussed for completeness.

Technical corrections

Non noted