

## ***Interactive comment on “A Tethered And Navigated Air Blimp (TANAB) for observing the microclimate over a complex terrain” by Manoj K. Nambiar et al.***

### **Anonymous Referee #2**

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TANAB review This paper needs some updates/inclusions/improvements in order to be suitable for publication detailed below. 1) Use of sensors (lack of rigorous or appropriate calibration, and combining of sensor data to allow for appropriate analysis and conclusions to be drawn) a. GPS, there is no mention of ground control, differential or precise point processing (PPP) whichever is the chosen method of processing GPS and thus geolocating the collected data accurately for analysis and interpretation. The author may have carried this out but without a short in calibration of sensors, I cannot comment on the results. b. IMU, there is no detail on the use of the IMU to determine the attitude and motion of the platform this is key to the later calibration and processing of anemometer u,v,w data into the reference of the earth. c. Anemometer, though

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wind tunnel calibration had been carried out, it did not detail the means of use of processed IMU/GPS data to derive the u,v,w reference to the earth. d. FLIR Zenmuse camera is an uncooled VOx microbolometer so reported measurement related to the total incoming IR radiation and requires calibration by means of accurately measuring a ground surface target. Any calibrated ground based temperature sensor measuring one of the ground targets temperature, probably easiest is to measure the lake with a thermometer. 2) Balloons and blimps are not a novel platform and as platforms, there is over a centuries worth of documented use. There is no detail on why the Aero Drum balloon was chosen as opposed to a UAV platform that many of the other researches in this field are choosing to use. I would expect a more in depth review and detail on why the balloon was the best platform, with references to other papers on the use of balloon, kites or UAV as platforms and there use of for observing microclimates. 3) On the choice of field site there needs to be considered and justified arguments why the characteristics of the mine are suitable for study of other microclimate environments.

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