AMTD Author's Response to Anonymous Referee #3
Referee's comments are ***bold and italicized***, and authors' are plain text.'

This is an interesting paper which describes measurements with temperature sensors at differenet locations under the rotors of an octocopter drone. The measurements are made in the laboratory, so the issues with aerodynamic stability of the aircraft, that follow on from this work, are not addressed. In summary I think that subject to some revision to improve the clarity (see the points below) this paper should be accepted for publication in AMT.

1) Why thermistors, and not fast thermocouples which have fewer issues from self heating?

In general, thermistors tend to be more sensitive to small changes in temperature when compared to thermocouples. This feature is advantageous when probing small scales of the atmosphere with small temperature ranges. Otherwise, thermocouples do have the advantage in that they are more linear in their calibration and less self-heating, and would be worth investigating in future studies with UASs.

2) page 4, line 5 "is" should be "are"

Fixed

3) What is the solar shield made of? In particular is it opaque to solar IR radiation - many plastics are not. (I realise that this is irrelevant to the laboratory measurements, but presumably the same shield is intended for use in the field.)

The solar shields are 3D printed using PLA filament, which is typically transparent to IR radiation. That is something worth considering for future designs, as these were the same ones as used in field applications. Thank you for the consideration of this.

4) The description of the various sensors is a bit confusing. One reads that the sensors are iMet thermistors in section 2.2. Then one reads in the next section that the sensors are Campbell Scientific ones - and in "the sensors" I emphasise "the". (As an aside the sentence with " ... two stainless steel probes from Campbell Scientific known as the 109 were used." is an odd way of putting it. Are they model 109 or what?) I think that the different sensors are there for intercomparison but it isn't clear from the way that section 2 is written, and it wouldn't hurt to be a bit clearer and more explicit at this early stage of the paper.

More details about the individual sensors were added, and the confusing colloquialisms were removed. The iMet sensors are PT 100 thermistors, and the NSSL sensor is a Campbell Scientific model 109 thermistor (CS 109). The rest of the paper was changed to refer to the NSSL sensors as the CS 109.

5) The caption of Figure A3 needs work; b) and c) need to be better described to make it clear what the different things that they show are. I can work out what is shown in b) by looking at a) but I can't be sure about c). Is c) the same thing from a different angle? Would a line drawing be more effective here? Certainly it would help to have a circle drawn on the photo on

a) to indicate where the detail illustrated in b) is located. It would also be good if the main photo could be retaken with better attention to lighting as it is not a very clear photo. The ceiling light behind one of the rotors is very distracting and degrades the contrast of the apparatus that is the main subject of the picture.

Unfortunately, it is not possible to acquire new photos of this setup. In its place, higher quality versions of the original photos with some digital enhancement have been substituted. We do agree that the low quality photos are distracting, and ideally these new ones provide more clarity to the reader about the physical system in this experiment. We think that Figure 2 provides enough of the technical details missing in these pictures.

The captions were updated to provide more visual descriptions, and an outline was included to clarify relation of images B and C to A.