Reviewer 1:

Thank you for your valuable feedback on our extended abstract

This is an interesting paper. A few points could be clarified:

- what is the size of the droplet ?

Its diameter is about 8 mm. This information is added to the paper.

- it is mentionned that the liquid temperature is controlled at 4°C, but Fig.2 shows temperature below 1°C in the liquid phase

Indeed, due to evaporation near the surface the liquid temperature is lower than the bulk temperature.

- could you add a few lines about the theoretical model used for comparison with experimental data?

We added a short description of the model to our paper.

- is it possible that a temperature jump exits between the thermocouple and the vapor?

Yes, but we measure at steady-state conditions (temperature reading short not be changing in time anymore) and therefore we expect it to be low. If an offset is present we expect that is will be similar for the vapor as for liquid.

- do you have an idea about the temperature uncertainty?

The uncertainty is about 0.4 ^{o}C. This is added to our paper.

- last line in page 2: "would expected" should be "would be expected"

Thank you. We adjusted it accordingly.

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Reviewer 2:

The abstract describes the implementation of an experimental apparatus to measure the temperature profile in gas and liquid near the phase interface of a curved water meniscus in a environmental chamber.

We thank the reviewer for his/her valuable feedback on our extended abstract

Several points should be clarified.

1. The authors should comment on the possible role of non-condensable gases since their ultimate vacuum was limited to 0.4 Pa. Moreover, the authors do not state the ultimate vacuum achieved in their set-up before the introduction of water into the chamber.

The chamber was vacuumed for about 1 hour at a pressure < 10 Pa.
We added a more detailed description of our experimental protocol to our paper.

2. The authors state a vapour pressure of 730 Pa in the caption of Fig. 2, which corresponds to a saturation temperature of 3.4 degC. However, it is not clear if this is the value they are assigning to the liquid side of the phase interface. Indeed, inspection of Fig. 2 suggests that the liquid/vapour interface temperature is < 2 degC, which corresponds to a water saturation pressure of < 707 Pa. The authors should carefully address this point as well as providing an uncertainty value for the K-type thermocouple measurement so that the level of significance of their results can be assessed.

Before and after the start of the experiments, the thermocouple was calibrated in a bath of boiling and ice water and the offset and a proportionality constant have been determined. The measured uncertainty was about 0.4C and did not change over time.

Before the start of the experiment, water was placed in the degasification channel and degassed for about an hour. Also the vacuum chamber was degassed for one hour at a pressure <10 Pa. Meanwhile the cooling device and pump were turned on to cool the evaporating liquid. After this hour, the thermocouple above the interface (at a fixed position) and the pressure was set at 780 Pa. Due to the occurrence of bubbles inside the syringe and the channel between the syringe and the droplet geometry, it was not possible to do an experiment lower than 780 Pa.

Due to the evaporation at the interface, the measured local liquid temperature is below 4°C. However the bulk liquid temperature is still about 4°C.

This information is added to the paper.

3. The measured pressure in the chamber during the experiment is poorly highlighted. The reviewer assumes that it was 493 Pa, but this is somewhat hidden in the text. A full description of experimental conditions should be provided in the Fig. 2 caption or a table should be provided so that there is no confusion.

More details about the experimental settings are added to the paper.

At the end of the results and discussion section, we compared our experiments (pressure was set and kept at 780Pa) with the finding by Fang et al. who performed their experiments at 483Pa. We rephrased the last paragraph of the results and discussion section to avoid confusion about the pressure settings.