

Interactive comment on “Continuous methane concentration measurements at the Greenland Ice Sheet-atmosphere interface using a low-cost low-power metal oxide sensor system” by C. J. Jørgensen et al.

Anonymous Referee #3

Received and published: 30 March 2020

In this paper, the authors studied the performance of a low-cost and low-power methane (CH₄) sensing system prototype based on a metal oxide sensor (MOS) sensitive to CH₄. The sensor was tested in a natural CH₄ emitting environment at the Greenland Ice sheet (GrIS). The primary scientific importance of the study is that it provides a clear example on how the application of low cost technology can enhance our future understanding on the climatic feedbacks from the cryosphere to the atmosphere.

The present study fits within the aim of this journal and the results are promising and

C1

interesting for future applications of low cost sensors.

The reviewer think that the paper can be published for open discussion and a main lack has been observed: - Low costs sensors from past studies show a ‘drift’ of the sensors response over the time. The authors do not cite this problem and neither they have tested it because a short experiment has been performed. This should be underline and future studies should include long term comparison between reference instrument and low cost sensor kit. The correction for the drift of the sensor will increase the final uncertainty related to the measurement and will also increase the cost of the field campaign because of the need of in situ continuous calibrations. The reviewer suggests to perform a study on the sensor drift over the months.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-468, 2019.