

## ***Interactive comment on “GROMOS-C, a novel ground based microwave radiometer for ozone measurement campaigns” by S. Fernandez et al.***

**Anonymous Referee #1**

Received and published: 12 May 2015

The paper describes a new mobile radiometer for ground-based observations of atmospheric emission lines in the frequency range 109–118 GHz. In this range several ozone lines and one carbon monoxide line (115.271 GHz) can be observed.

The novelty of the radiometer lies in the use of the Peltier and noise diode calibration sources. None of these techniques are new in their-selves, both of them have been used for calibration purposes by other microwave groups. The novelty lies in the careful implementation, the impressive linear fit in Figure 9 show that Fernandez et al have succeeded. The new loads can be used when sky-dip measurements are unsuitable.

The paper is clear and easy to follow. I like when the different steps are explained and the equations, necessary for a quick understanding, are shown.

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I can recommend the paper for publishing in AMT but I have two suggestions that, according to me, would make the paper even better:

- 1: Omit the section about CO observations for the time being, wait until you can write this part with the same accuracy as the rest of the paper.
- 2: Change the frequency scale in Figure 1 to only show the range of interest e.g. 100 – 130 GHz or perhaps 100–150 GHz if you want to discuss the 142 GHz ozone transition. Doing this the different ozone lines and the CO line at 115.271 GHz would be seen in the simulation.

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Interactive comment on Atmos. Meas. Tech. Discuss., 8, 3001, 2015.