Specific comments

1. The authors use the relative humidity (instead of the water vapor pressure) to characterize the effect of the presence of water on sky emissivity. The reason for this choice is not clear given that relative humidity involves both vapor pressure and air temperature.

As the referee states, both the relative humidity and the water vapour pressure are variables that characterize the presence of water vapour in the atmosphere. They are related variables since, given a temperature, one can be deduced from the other. From the initial analysis of the data, we found that the relationships were more consistent (less scattering) with relative humidity than with water vapour pressure for both temperature and emissivity, and that was the reason why we chose to use the former. The explanation for this result may lie in the fact of the relative humidity being more directly connected to the saturation of the air, so that it can capture better the presence of clouds that, in such an altitude, are often relatively close to the surface. After the referee's comment, we have extended the explanation about the choice of the relative humidity for the parameterizations (line 156-160 in revised text).

2. There is a problem with Fig. 6 and its corresponding comment (P3798, L18): according to the figure the lowest measured values are overestimated and not "underestimated".

This is absolutely right. It was our mistake when writing, and we meant "overestimated". We apologize for this, which has been corrected in the revised version of the paper (lines 301-310 in revised text).