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Atmospheric Measurement Techniques Discussions

Interactive comment on "A fast SWIR imager for observations of transient features in OH airglow" *by* P. Hannawald et al.

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This manuscript describes a new instrument setup to observe at a fast rate (images every ~0.5s) small scale structures visible in the OH airglow emission, at ~87km. Even if airglow imagers are not new, this setup might be interesting to investigate ripple-like features. The authors carefully looked at the impact of the O2(0,0) emission on their measurements and also compared their results with a separate instrument (GRIPS). The wave analysis technique is explained with a couple of examples. A complete analysis of their dataset should provide interesting results on the occurrence and characteristics of instability features in the MLT. Nevertheless, for a complete setup, I would suggest they also use a large FOV imager (maybe all-sky with a similar detector) to assess the atmospheric context.

Minor points: p2 l.21: a unique l.23: Atmospheric gravity waves especially are... p3 l.8: most lidars have much better vertical resolution than radars! p4 l.1: using narrowband

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Discussion paper

filters... l.6: in a parallel direction l.15: The 320x256 pixel (or "by" instead of "x") l.16: based on InGaAs technology... l.23: are used. p5 l.3: The airglow signal l.5: images with the same exposure time... l.12: which is neglected. l.14: at the altitude of the OH emission peak, at 87km... l.19: The observed trapezium-shaped area of the airglow layer is the projection of the rectangular-shaped sensor due to the observation geometry. p6 l.4: (see Fig. 2)... at constant altitude... l.12: The standard... l.16: ...(1988) the variation is +/-4km. l.25: mapping the pixels,... p7 l.1-12: seems complicated, maybe calculating the positions in reverse would be easier l.18: keograms for the night... l.24: no need to write again what GRIPS means p8 l.12: started to appear. p9 l.24: superimposes on wave (I)... p10 l.19-20: jumped to the next line l.21: predefined p12 l.8: If measuring the wave parameters from the projected image (Fig. 9a),... l.15: but it is the opposite for wave (II). p13 l.3: short lifetime l.18: ...series revealing... l.19-21: The Brunt-Vaisala period calculated for the given temperature and for vertical gradients between 0 and 2K.km-1 varies between 272 and 299s... l.21: at 87km p14 l.10: for a sensor... l.17: remove comma after "noting" l.20: didn't say that in the text (0.99) l.22: at about 87km l.26: propagation compared to...

Figure 3: left side axis should be in (km/pixel) Figure 4c: could be a little be larger to include the complete FOV (bit missing at the bottom)

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