

## ***Interactive comment on “Limited angle tomography of mesoscale gravity waves by the infrared limb-sounder GLORIA” by Isabell Krisch et al.***

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The paper shows the first results from the GLORIA instrument operating in the limited angle tomography mode. It highlights the benefits and drawbacks of this mode. It compares this mode to the full angle tomography mode, and performs a rigorous error analysis of the results. The paper is clearly written, interesting and easy to follow. I recommend publication with a few minor clarifications.

Minor comments P7I23: How is the accuracy and precision calculated? In particular what errors go into this error analysis? Are things like pointing error of the instrument, thermal noise, calibration error, instrument characterization errors, spectroscopic er-

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rors or errors in the assumptions of the background atmosphere included? As a short list is required for a reader to be able to judge whether all significant terms are included.

P8I12: please clarify what “25 and 60 neighboring points” means in terms of approximate distance or pressure.

P14I10: It is a bit unclear to me that “horizontal orientation in this area... is not recovered”. For figure 9a, 9e, 9i, it does indeed look like the wave fronts are oriented from north-west to south-east. However, a degradation may be seen, but I have a bit hard time connecting the text with the figure. Perhaps explicitly writing out the directional error in the text (20 degrees?) would make it easier for the reader to follow.

P18 figure 11: In panel f) there is a large response in the retrieved values far below the tangent points. This is rather counter-intuitive, and the reason for it (I assume it is caused by the horizontal regularization) should be written out in the text.

Editorial comments P2I24: “horizontal” -> horizontal P7I32: “ensures” is in my opinion too strong a word, unless the author can refer to some source which has done a rigorous error analysis on this method. Suggest that this sentence is rephrased.

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