

Interactive comment on “Processing of GRAS/METOP radio occultation data recorded in closed-loop and raw-sampling modes” by M. E. Gorbunov et al.

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- *Abstract: it mentions that it will show data quality to be similar to COSMIC. This is in fact nowhere shown in the whole paper.*

It is shown in the paper. See page 6 (1066): *The systematic differences and standard deviations GRAS150ECMWF are very close to those of COSMIC data (Gorbunov et al., 2011; Marquardt et al., 2011).* On our view, it is sufficient to provide these references, where the COSMIC150ECMWF statistics is analyzed.

- *Page 1066, Line 6: How sharp is the tropopause resolution of ECMWF, is this really*
C241

just a GRAS issue?

It is attributed to the processing, rather than to the data itself. ECMWF has a resolution of about 0.31500.5 km at this height. But data processing (both ours and UCAR146s used for COSMIC) uses a heavier filter with a width of around metricconverterProductID2 km2 km. The sentence in the paper has been updated with this information.

- *Page 1066, Figure 6: Why has CL data a much larger bias than RS data at low lats? That points to some processing problem, the instrument should measure a similar bending in RS and CL, only CL will terminate earlier. Your figure 6 however shows an increasing bias downward, starting already at around 8km, while the RS+CL data does show no bias down to about 2km at low latitudes.*

The large difference between RS+CL and CL plots for low lats in the lower troposphere is explained by the receiver tracking errors in the CL mode. CL mode is not suitable for performing measurements in the lower troposphere under strong multipath condition, which was the reason of the implementation of open-loop mode in COSMIC and RS in GRAS.

The small difference at larger heights is explained by the fact that the CL statistics for low lats has only been computed for one single day and only included 183 events.

- *Conclusion: it states that removal of navigation bit data is very similar to detection of it; this is again not shown in the paper. It would actually be very interesting to show this here, and remove a not too useful plot (fig.2?).*

We did not include the figure since it is very similar to the other figure, cf. Page 6 (1066): *The results presented in Figs. 4 and 5 were obtained for the external navigation bits removal. Similar statistics computed with the internal navigation bits removal results in a negligible difference from these figures.* We have rewritten this sentence in the updated paper.

- *Conclusion: Last paragraph seems to be out of place.*

We have removed this paragraph.

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