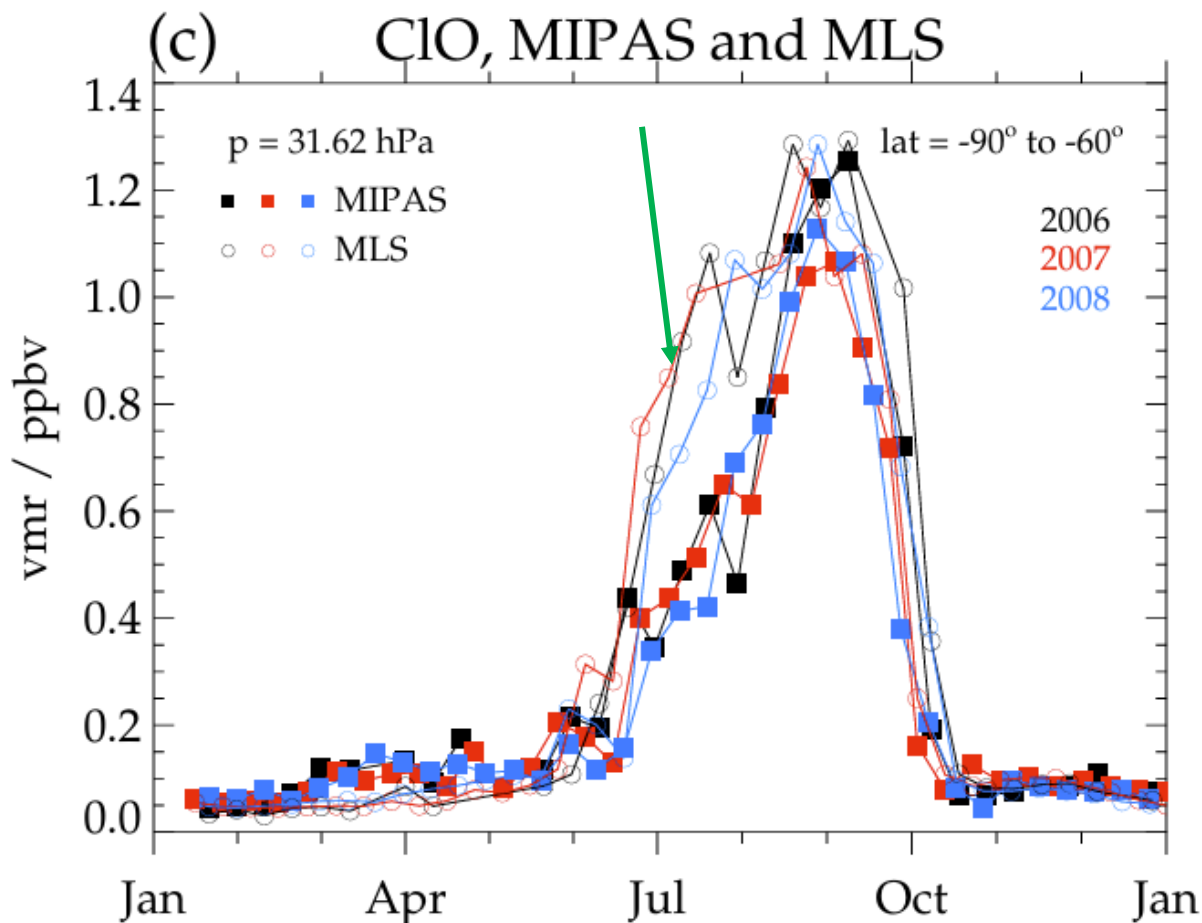
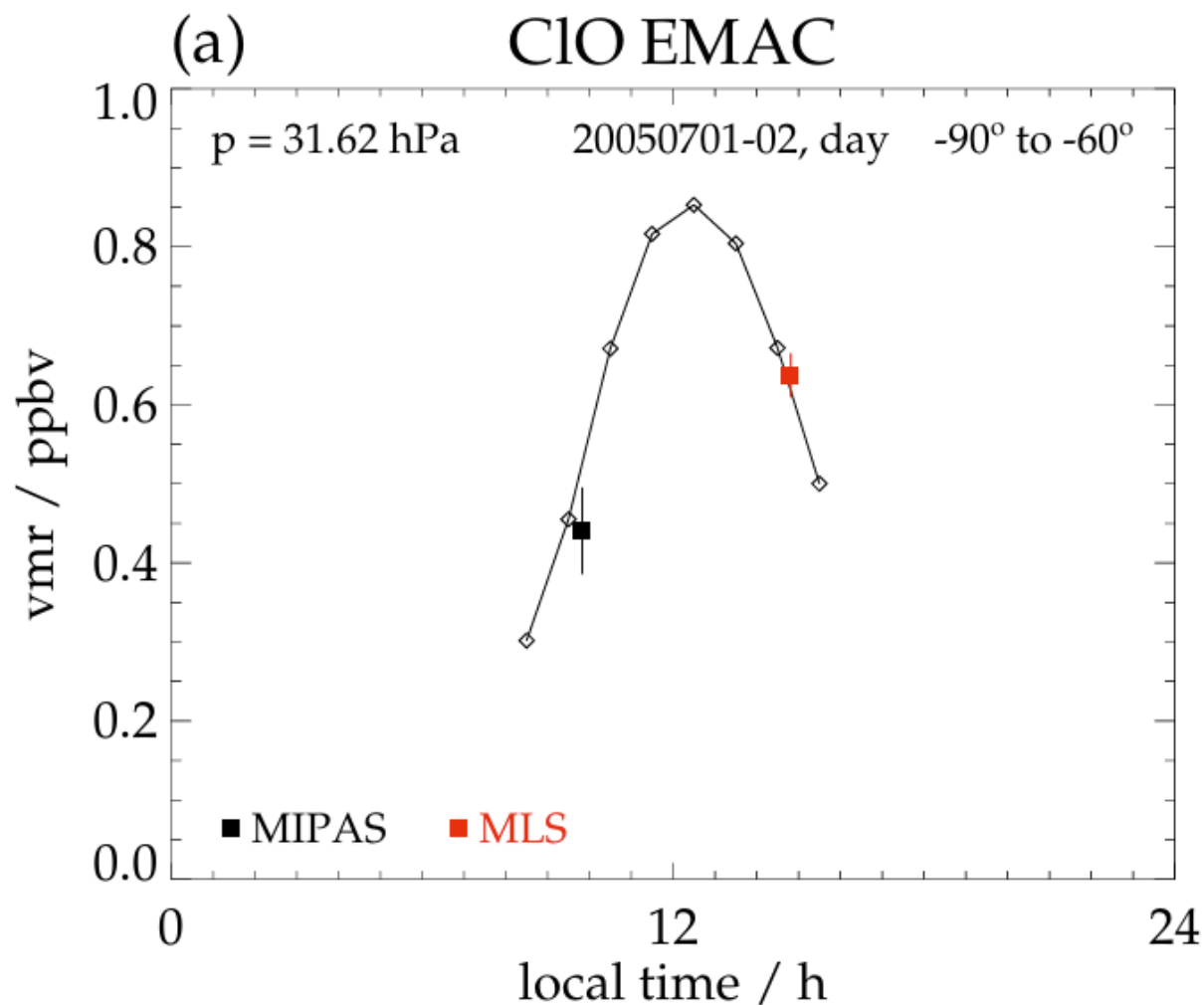


This article presents a new V8 data product for ClO from MIPAS. It looks like a good data product, a significant improvement compared to the previous processing version for the altitude region near 40 km, i.e., in the vicinity of the stratospheric peak that is not linked to chlorine processing in the polar vortex.

Overall, I see no major problems with the manuscript. There was just one place where it seemed an explanation may not have been completely explored. There were differences observed between MLS and MIPAS ClO results in July, as shown in Figure 17 (panel c for Figure 17 is reproduced below, with an arrow indicating the largest discrepancies).



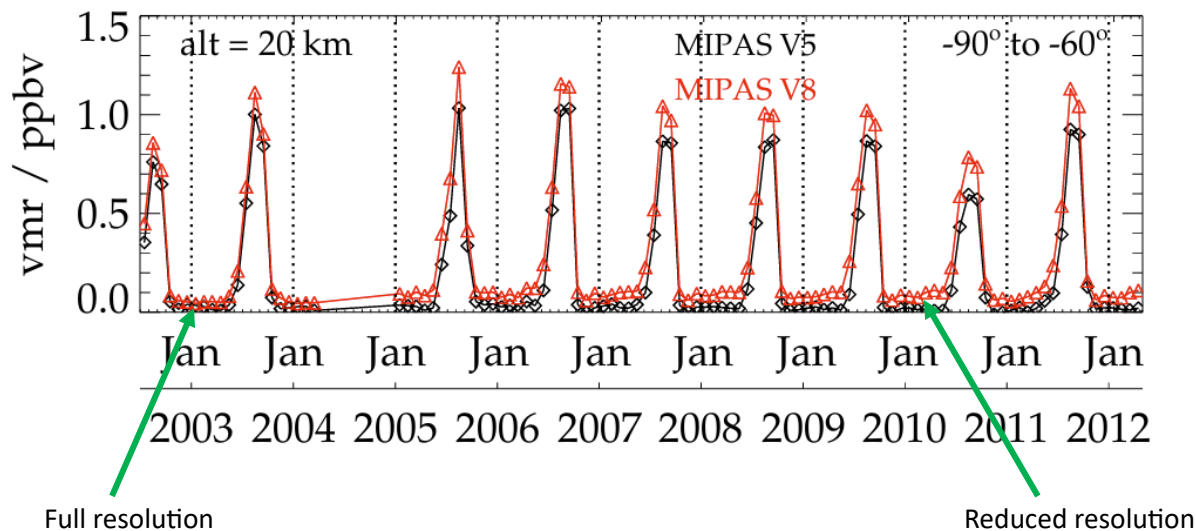
Model calculations were employed to show that discrepancy might be attributed to the difference in local time between the two instruments, as shown in Figure 18a, which is reproduced below:



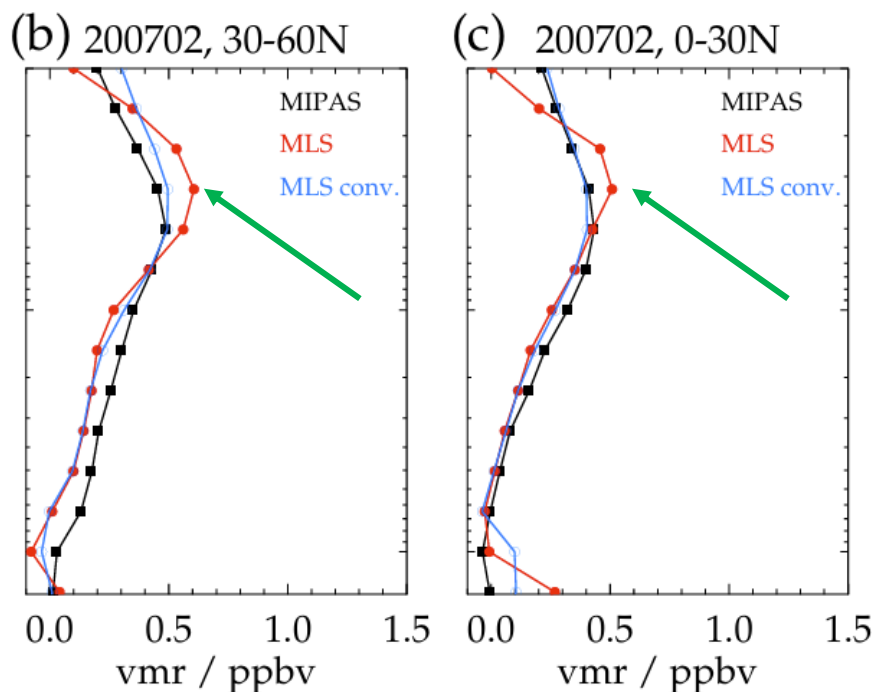
This argument appears to be well supported, but to make it more complete, a similar calculation should be done for September 1st, where the ClO peaks and the differences between the two instruments (as seen in Figure 17c) are less pronounced. If the model calculations predict a smaller discrepancy for ClO at the two local times in September, that would add more weight to the argument. If the model calculations predict a similar difference at the two local times in September, that would make the argument more tenuous.

I will point out a couple of observations of the ClO data that need not be addressed for this manuscript but may serve as food for thought should there be a future processing version.

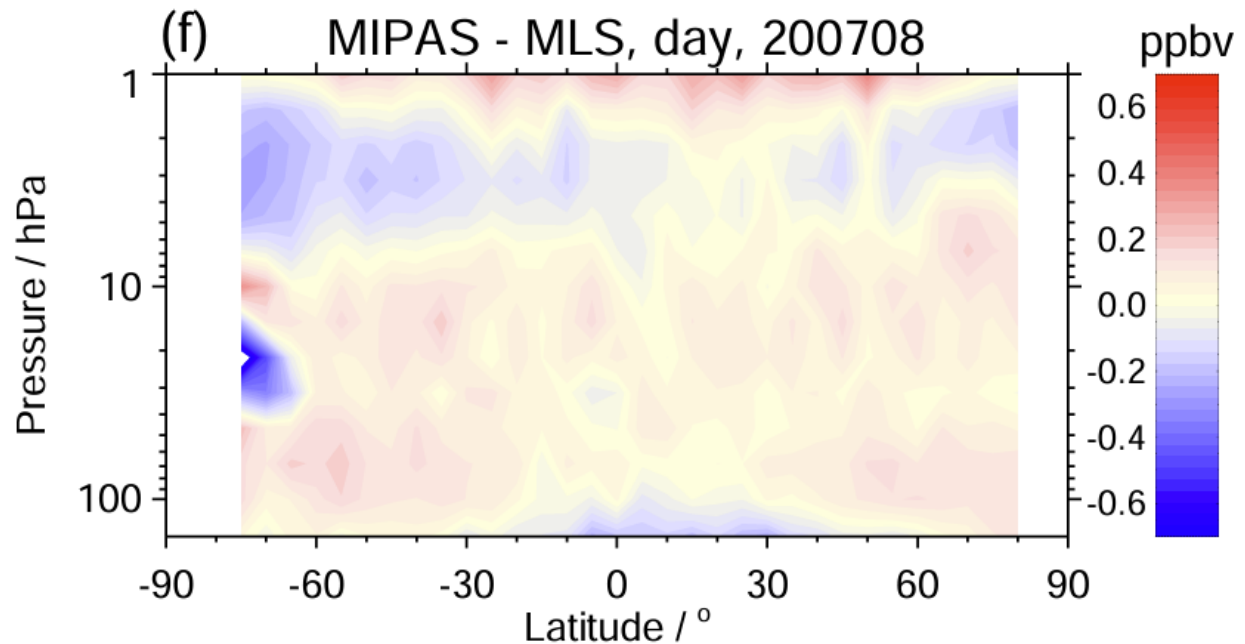
Figure 9 is reproduced below:



In the V8 results, there is a distinct step (increase) in the retrieved background CIO level after the instrument was switched to the reduced resolution mode (i.e., 2005 and later). There also appears to be a persistent slope to the data during background periods between polar winter events for the reduced resolution period, but there is no hint of a slope for the full resolution period. That suggests a possible artifact in the retrieval that is significant only for the reduced resolution period. There is no apparent discrepancy between full resolution and reduced resolution in the V5 results.



A portion of Figure 15 is reproduced above. The arrows indicate the stratospheric CIO peak seen by MLS that MIPAS never seems to fully capture. This is perhaps more evident in the difference plot between MIPAS and MLS from Figure 14, reproduced below:



MIPAS is persistently lower around 2 to 3 hPa and persistently higher near 1 hPa, which suggests the CIO retrieval is smearing the peak's contribution in altitude. Since this is presumably associated with the altitude resolution of your retrieval around 1-3 hPa, I'm not sure if there is anything that can be done to improve the situation, but I thought I would mention the issue in case there was.

The systematic blue feature at the bottom of the above plot appears to be associated with enhanced tropical CIO in the MLS data, which I am not convinced is real, so not a problem in the MIPAS results.

Minor comments:

> The caption to Figure 1a mentions a green dashed line, but the only panel that features a green dashed line is Figure 1b.

> Page 14, line 2: internal line shape (ILS)

Do you not mean "instrumental line shape," defined as ILS in the footnotes to Table 5?

> In the titles for Figures 13a, 13b, 14b, and 14c: CLO

Should be CIO, without the capital "L"