

Interactive comment on “Vertical profiles of lightning-produced NO₂ enhancements in the upper troposphere observed by OSIRIS” by C. E. Sioris et al.

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p5015 line 15 The 9-12km resolution for MIPAS NO₂ refers to the averaging kernels of the IMK processor. The ESA processor only retrieves NO₂ down to 24km in order avoid instabilities in the retrieval. In both cases these standard "operational" algorithms rather than NO₂-specific.

MIPAS itself made upper-troposphere measurements with 3km spacing in its original full resolution mode, and 1.5km spacing in its current nominal operating mode. In principle, in terms of S/N, using the entire 1580-1610cm⁻¹ region of the spectrum it should be possible to retrieve NO₂ at 12km tangent height with a vertical resolution of 3km with

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a precision of the order of 20%, but it would require a specialised retrieval algorithm and, in particular, good knowledge of H₂O as the principle spectral contaminant.

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