

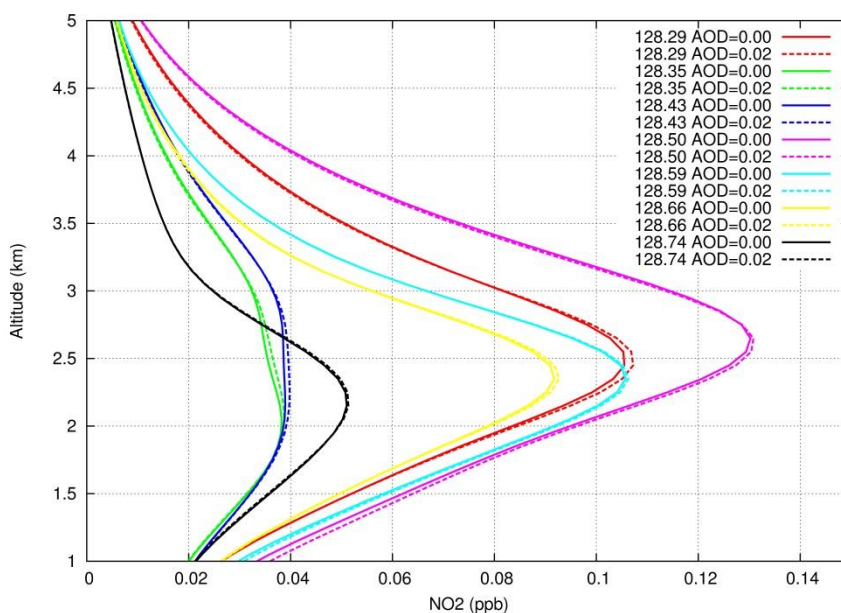
Following the referee and editor suggestion we have added the requested information and AK figure as well. We have been intentionally brief in the answers since, to our opinion, the paper is increasing too much the emphasis on the OEM part which, in fact, is only one case study and represent a small part of the paper.

We consider, however, a relevant outcome of the work the demonstration that surface air reaches the FT very fast, but we wanted just to outline in a qualitative way.

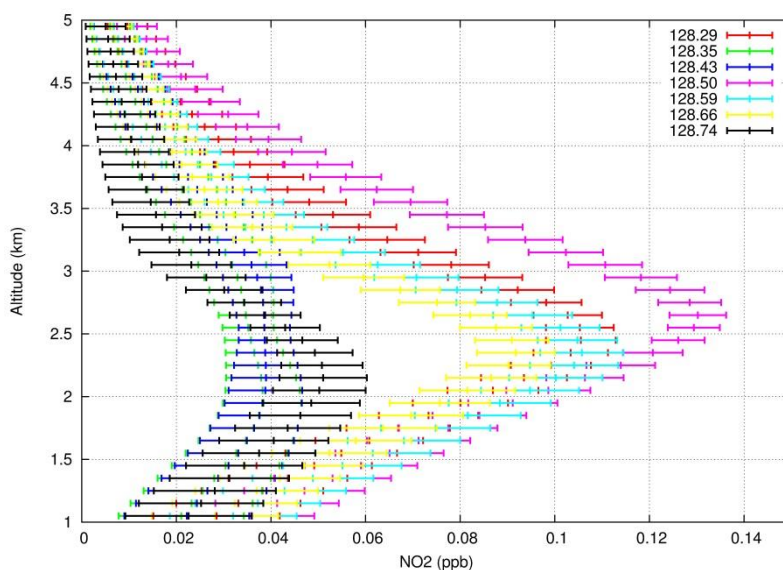
Modifications to the previous version of the manuscript are highlighted in red.

In addition we would like to include here supplementary material that might be of interest for the referee and editor.

a) Retrieved profiles along the case study day with and without aerosols.



b) Total retrieval errors (S) for each altitude computed by  $S = Sa - GyKSa$ , where Sa is the a priori profile error covariance matrix, Gy is the gain matrix and K is the weighting functions matrix.



Best regards

Manuel Gil-Ojeda in representation of all co-authors.