

Interactive comment on “MAX-DOAS measurements of NO₂, SO₂, HCHO and BrO at the Mt. Waliguan WMO/GAW global baseline station in the Tibetan Plateau” by Jianzhong Ma et al.

Anonymous Referee #1

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Review of *Á*n MAX-DOAS measurements of NO₂, SO₂, HCHO and BrO at Mt Wliguan WMO/GAW global baseline station in the Tibetan Plateau *Á*z by Jianzhong Ma et al.

The objective of the paper is to describe the measurements and the results of five years (2012-2015) monitoring of four atmospheric chemical species (NO₂, SO₂, HCHO and BrO) at a high-altitude station on the Tibetan plateau by the MAX-DOAS technique. It is shown that the averaging of 10 spectra allows to improve the signal to noise ratio, allowing to measure NO₂ varying from 5 ppt in winter and 70 ppt in summer in the lower layer, whereas the HCHO is of the order of 0.3-0.7 ppb and that of SO₂ is lower than 0.5 ppb and that of BrO not significant.

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General comments The paper is very long which includes 23 pages with 18 complex figures and another 28 pages and 26 figures in appendix. Moreover, the figures are often repeating and include up to 12 plots. In addition there are 103 references often unnecessary. The conclusions, as summarised, above are very limited. In summary the paper is almost impossible to follow.

Recommendation There is no doubt that the paper requires major revision before acceptance, including: - simplified organisation following the list of important items, (and ignoring less important), - list of figures really required (e.g wind direction and speed, tropopause height, correlations)? - Figure 8, 9, 10, 11b.. ? A1, A2(already in main text), A9, A10, .. and many others disputable - Correction of figures difficult to read (e.g. 1b and too small legends) - Order of species in the discussion: NO₂, HCHO, SO₂, BrO, identical in the various tables and figures, - Why broken cloud periods shown? Is fig A24 necessary? Why not using clear sky only? - Increase figures legends e.g. A2 right, A3right. ...and many others - Figures dates: what Jan 1, Jan 13 ... mean? (e.g. A2, A3 ...) - Why correlation coefficient between meteorological quantities?

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