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Atmospheric Chemistry and Physics Discussions

Interactive comment on "MLS measurements of stratospheric hydrogen cyanide during the 2015–16 El Niño event" *by* Hugh C. Pumphrey et al.

Hugh C. Pumphrey et al.

hugh.pumphrey@ed.ac.uk

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Owing to an oversight, the correct text regarding the FTIR instrument did not get inserted into the final copy submitted to the discussion stage. The text between page 12, line 30 and page 13, line 7 should have read as follows:

It is difficult to compare atmospheric HCN for the two events as the data available is so different. Fourier transform infrared spectrometers (FTIR) (see Fig. 2) provide the longest record, but few are in the tropics, and, of these, only the NDACC Mauna Loa station was recording during both the 1997-8 and the 2015-16 events (Hannigan et al., 2009). Figure 8 shows data from this instrument. Solar viewing FTIR instruments

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derive vertical information from the pressure broadening of absorption transitions in transmission spectra and typical degrees of freedom in the HCN retrieval are between 2.5 and 3.5. Here we plot average mixing ratios over two deep layers. To reveal the observation of the El Nino enhancements and diminish short term variability we smooth the individual observations using the local linear interpolator (Wand and Jones 1995), with a bandwidth of 0.05 years where the data are dense, and 0.45 years where there are lapses in observations; these lapses occur intermittently between 1999 and 2012. Comparing the two events in the stratosphere, HCN in 1997-8 starts from a slightly lower background level near 0.2 ppbv, increases to a higher value above 0.3 ppbv and persists at an elevated level for longer. Despite peak values in 2015-16 being higher, higher sustained levels above 0.3 in 1997-8 appear to show greater stratospheric loading. In the troposphere, the 1997-8 event appears larger, both in terms of the peak value and the smoothed curve, in general agreement with GFED. In neither the troposphere nor the stratosphere is the difference between 1997-8 and 2015-16 as large as one might expect from the GFED emission estimates alone.

The corrected text contains one extra reference.

Hannigan, J. W., Coffey, M. T., and Goldman, A.: Semiautonomous FTS Observation System for Remote Sensing of Stratospheric and Tropospheric Gases, J. Atmos. Oceanic Technol., 26, 1814– 1828, doi:10.1175/2009JTECHA1230.1, 2009.

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