

Review of "New ground-based Fourier-transform  
near-infrared solar absorption measurements of  
XCO<sub>2</sub>, XCH<sub>4</sub> and XCO at Xianghe, China" by  
Yang et.al

**General comments** The manuscript "New ground-based Fourier-transform near-infrared solar absorption measurements of XCO<sub>2</sub>, XCH<sub>4</sub> and XCO at Xianghe, China" by Yang et.al is a revised version of the manuscript "A new site: ground-based FTIR XCO<sub>2</sub>, XCH<sub>4</sub> and XCO measurements at Xianghe, China" following the discussion stage of the peer review process and describes a data set of total column dry air mole fractions of carbon dioxide, methane and carbon monoxide derived from near infrared, solar absorption Fourier transform spectroscopy using methods similar to those of the Total Carbon Column Observing Network (TCCON). The described dataset covers a year of measurements and therefore captures a single seasonal cycle.

The revised version of the manuscript has taken account of the reports of both reviewers and taken steps to address them. Subject to a few technical changes below, I would recommend publication in ESSD.

**Specific comments**

**Response to reviewer 1** The authors have revised the manuscript in order to make the aim of the work clearer. They have also expanded the sub-section discussing the results of their retrievals to include XCO tracer based analysis and time-series decomposition in order to identify potential sources of relatively polluted and clean airmasses as identified by their observations. This additional material addresses the reviewer's concern that the 'the description of the paper lacks scientific significance and originality' and is likely sufficient to satisfy the aims and scope for a data description paper.

**Response to reviewer 2** The authors have made changes to the manuscript to clarify the relationship between the Xianghe site and the Total Carbon Column Observing Network (TCCON). It will be good to see the time-series extended and incorporated into TCCON in the future. Other specific comments have been addressed satisfactorily.

**Technical corrections**

P8 in the discussion of seasonal variations include both the month and year when describing maximum and minimum values to make it clear that these values relate to a specific cycle rather than every cycle.

P9 L21 the choice for the vertical range should be explained.

P14 L9 "appear very" is a qualitative statement consider changing to e.g. "are demonstrated to be".