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Atmospheric Measurement Techniques Discussions

Interactive comment on "Study of the regional CO₂ mole fractions filtering approach at a WMO/GAW regional station in China" *by* S. X. Fang et al.

Anonymous Referee #2

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Review of Fang et al., manuscript AMT-2015-156

This study highlights on the requirements of having logical filtering techniques of air CO2 dataset collected from stations largely affected by local sources. Surface observed CO2 data during 2009 to 2011 are used for filtering by four approaches "black carbon concentration (BC), statistical approach (REBS), CH4 as auxiliary tracer (AUX), and meteorological parameters (MET)". MET approach is preferred "most favorable" by the authors.

General comments: Overall concept of the paper is not new; various previous studies

have already reported such kind of filtering approach based on larger data sets. At the beginning of abstract, authors uses 2009 – 2011 observed data sets for filtering, whereas growth rate is determined using 2009 – 2013 data sets. Two different periods mentioned in the abstract is bit confusing.

Specific comments: There are 4 different filtering technique discussed in this paper. This is not conclusive that which technique will be suitable for a particular location. Especially if some station acquire night time data how the applicability of these filtering techniques might alter. If one wants to apply all the 4 technique whether the result will be representable for a regional station.

Minor comments: Section 7058: 1. Line 20- add reference for "filters based on specific traces gases....." 2. Line 25- add reference for "Meteorological filters....." 3. What do you mean by Weather statistics? 4. The line "Ths method e.g. consider various....." is too lengthy and not clear, please split the line. Section 7060 1. Why Fang et al., 2014 paper filtering technique gave different results from Pu et al., 2014? Section 7061 1. Please mention the altitude of the "small hill" Section 7064 1. Auxillary Tracer—- The data filtration technique for poor CO2-CH4 correlation is not clear. Section 7066 1. Why the CO2 increasing trend is not seen in the BC method filtered data.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 7057, 2015.