

Interactive comment on “Continuous CO₂/CH₄/CO measurements (2012-2014) at Beromünster tall tower station in Switzerland” by E. Satar et al.

Anonymous Referee #2

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The authors instrumented a radio tower in Beromünster (Switzerland) for measurement of atmospheric CO₂, CH₄, and CO mixing ratios at 4 different height levels up to 212.5m above ground. They analyze the first 2 years of high-frequency measurements with respect to growth rate, seasonality, mean diurnal cycles, and tracer-tracer correlations. From the vertical profiles, they calculate storage fluxes as a proxy of local surface sources/sinks. All the results are compared to other tall tower measurements and to information about local/regional tracer fluxes, and discussed in terms of their implications for the processes causing the observed trace gas variations.

I find this an important and interesting work, adding information to better understand the highly complex cycles of greenhouse gases in Europe. In addition to the information on the local/regional trace gas processes, the setting up and operation of this tall tower site is a very valuable contribution to the continental and world-wide observation network.

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Its value will even increase further with continuation of the measurements.

The paper is very well and clearly written. I like the concise language and the way the authors put their work into context with other observations and the European greenhouse gas cycles. I clearly recommend this work for publication in Biogeosciences. Except for very few very minor suggestions below, I have no comments to add.

Minor comments:

p2 line 20: remove spurious "were"

p3 line 14: clarify the measurement schedule by adding "...was conducted **successively** ..." (if that is what you did).

p4 line 21: It seems that "For the estimation..." starts a new topic, which could be clarified by a new paragraph.

p5 lines 6-15: I feel it would be good to make the meaning of the storage flux clearer. If I understood the meaning correctly, it might suffice to add in lines 14-15 "***surface** source" and "***surface** sink".

p8 line 6: you probably mean singular "maximum"

p12 lines 16-19: Mention where the Winderlich et al measurements were done.

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