Review Osman et al.: Carbon monoxide climatology derived from the trajectory mapping of global MOZAIC-IAGOS data (doi:10.5194/acpd-15-29871-2015)

General comments

I am happy to see that the authors responded to my comments on the first version of the manuscript and addressed most of my comments satisfactorily. The paper also improved by some shortening as suggested and by several re-arrangements of the figures presented. Although I am still not totally convinced about quality of the climatology over most parts of the southern hemisphere, readers are now better informed about potential weaknesses of the database, including number of samples and error estimations for each grid box as shown in the new Figure 2, and will be able to draw their own conclusions. Personally I believe that mixing of CO-poor air from remote regions (e.g. over the oceans) into air parcels with elevated CO as sampled by MOZAIC/IAGOS (over land / mostly South Africa) seems to be underestimated with the presented approach. Nevertheless, the climatology is highly valuable for other regions and will in the future certainly be subject to further comparisons and evaluation studies. I suggest to publish the paper after a few technical corrections summarized in the following.

Technical corrections

Page 7, line 13: Heretrajectories -> Here trajectories

Page 15, lines 11-12: Skip sentence, as bottom panels do not exist anymore in Fig. 5.

Page 15, lines 18-24: Text belongs to the main text, not to the figure description.

Page 17, line 15: areaslike -> areas like

Page 17, line 16: thequalitative -> the qualitative

Page 21, line 19: CO VMRs values -> CO VMR values

Page 22, line 17: to tbias -> to the bias

Page 40, line 30: The dataset The unique -> The unique …

Page 45, lines 33-34: reference is not complete

Page 46, lines 1-4: reference in wrong order