

Referee2 Report: Network design for quantifying urban CO2 emissions: Assessing trade-offs between precision and network density

My concern about the footprints is definitely not anything related to the plotting scales, but about the low sensitivity of measurements to the changes in emission fluxes on the western side of the model domain. Authors do agree that there are large footprint values for locations where there is an observation site. But the next statement in the authors' response is not very clear in its present form. i.e. how is it (more specifically what is plotted in Fig. 2) related to the diffuse signals? Further examination of the transport mechanism for this case would have been beneficial to explain these spatial patterns, as I stated in the former reviewer comments. Since it points to the representativeness of the observations (i.e. what is "seen" by these sites), I recommend authors to add necessary statements in the manuscript to support/justify the spatial patterns of the footprints presented here. I would think that it is rather easy to include it in the manuscript as it does not alter any conclusions made.

Reported error estimate in the abstract:

I do still think that it is important to be specific in terms of uncertainties. Authors know that there are other important uncertainties that affect the retrieved flux accuracy and these uncertainties are ignored in the current estimation. Hence I suggest authors to state the value(s) of combined observation and model uncertainty which resulted in the 5% posterior error.