Review of the manuscript

"Evaluation of two common source estimation measurement strategies using large-eddy simulation of plume dispersion under neutral atmospheric conditions"

General assessment

This is an interesting study that uses the large-eddy simulation (LES) technique to test the validity of two common air quality measurements/models to estimate point source emission strength. Although the study finds substantial discrepancies between LES and measurements, it still highlights possible deficiencies in both approaches. I only have minor comments that I hope the authors would address.

1) I must note that the blame is mostly put on LES. On Line 245, the issue of the log-layer mismatch in LES is discussed as a possible reason for overshooting the mean velocity profile, but this is essentially undermining the use of LES. There are several studies that addressed this issue (besides from Brasseur who reported both undershoots and overshoots depending on a variety of parameters). See for instance Bou-Zeid et al. 2005; Physics of Fluids).
2) The authors argue in the introduction that DNS is becoming affordable and few paragraphs later mention that LES is expensive. It is fine to use LES in idealized conditions to test theoretical arguments, so I wouldn't undercut the approach.

3) The authors should at least comment/speculate on the effects of stability on their results. What do they expect in terms of statistics under unstable conditions?

4) The source characteristics need to be clarified. Emissions prescribed as a Gaussian distribution, as opposed to uniform source from one grid-cell mimicking a true point source, need to be discussed