

Comments to the Author:

You mention the high correlation of the SAC data with that of the nearby stations which are included in the data assimilation. I think you need to be careful saying they are 'independent' observations, as they are not independent from a strict statistical perspective.

You could try this from line 23 on page 6:

"In addition to the CO<sub>2</sub> measurements, the hourly air temperature, wind speed and wind direction are measured at a height of 100 meters above ground level at the SAC station. The meteorological data from SAC are not included in the data assimilation process of the NCEP operational global weather observation subsets used in the WRF nudging program (section 2.1). We therefore use them in the evaluation of the model performance in simulating the meteorological fields."

**Text changed as suggested. Thank you.**