

Interactive comment on “Mercury emissions of a coal fired power plant in Germany” by Andreas Weigelt et al.

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Response to Anonymous Referee #3

General comments: This MS conduct an very interesting study of multiple air pollutants, including Hg, SO₂, CO₂, CO, NO_x emissions through the onboard aircraft measurement in the plume downwind a large coal-fired power plant in Germany, and calculated the emission ratios of Hg versus different air pollutants, and the GOM percentage in the plume. Generally, the work provides a lot of information of the multiple air pollutants emissions. Based on the emission ratios, one can calculate one pollutant emission through the other emissions, these make the pollutant estimation much easier.

Specific comments: (1) Since the air pollutant emissions from the coal fired power plant is largely depended on the boiler type, coal property, and the air pollutant control de-

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vices (APCDs), so, the result form one plant maybe differs from the others. Hence, please supplement the information about some basic aspects about the studied power plant, especially the coal property such as the proximate and ultimate analysis (if possible), the configuration of APCDs for NO_x, PM and SO₂ control.

We were not able to get actual data on the composition of the fuel in 2013, i.e. of lignite and sewage sludge, from the operator of the CFPP Lippendorf. Mercury content of the lignite from two seams of “Vereinigtes Schleenhain” open pit was 0.40 and 0.49 ppm (Rösler et al., 1977), within the range of eastern German lignites of 0.16 – 1.5 ppm (Yudovich and Ketris, 2005). This is now mentioned in the text.

We provide more information about FGD system and refer for details to Schütze et al. (2015). As discussed by Schütze et al. (2015), the chemistry within the FGD system is at least as important as the fuel composition. Schütze et al. (2015) also show a high day-to-day variability of the mercury removal efficiency. Assuming nearly constant FGD operating conditions, this suggests to a large inhomogeneity of the fuel composition.

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