

# ***Interactive comment on “Emissions databases for polycyclic aromatic compounds in the Canadian Athabasca Oil Sands Region – development using current knowledge and evaluation with passive sampling and air dispersion modelling data” by Xin Qiu et al.***

## **Anonymous Referee #3**

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This research work compared CALPUFF modelling results applying the two air emissions databases of CEMA and JOSM programs. The modelling results are then compared with observations to evaluate accuracy of the air emissions values. This research makes significant contribution to the work of PAHs air emission estimation in the oil sands region. While dispersion models could have systematic error existing inherently in the model, particularly and usually lead to underestimation at low pollutant concentrations, this research presents a progressive approach to compare the mod-

elling results relatively for the original emissions data and the improved one. I suggest to publish it to make colleagues working in this field be aware of the work progress.

It would be clearer if the author could add more information on meteorology and emission summary. Additionally, PAHs have a wide spectrum including compounds in gaseous phase and particulate phase, which can exhibit different characteristics during transport and deposition. Although the research is focused on relative comparison of two emissions databases with only considering dispersion, the author may analyze qualitatively the resultant impact of turning off deposition modelling on modelling results in general.

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-1091>, 2017.

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Discussion paper

