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Interactive comment on "Improvements to the WRF-Chem model for quasi-hemispheric simulations of aerosols and ozone in the Arctic" *by* Louis Marelle et al.

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In this paper, the authors examine several methods for improving WRF-Chem simulations of aerosol and ozone properties in the Arctic. The relative contribution of each method to the overall change in aerosol and ozone estimates are outlined. The changes are evaluated against observations and show a marked improvement in the estimation of aerosol and ozone concentrations. The authors identify several areas (halogen chemistry, aerosol activation within ice particles, and increased model resolution) that may contribute to further simulation improvements if implemented within WRF-Chem. The paper is well-written, easy to understand, and makes progress in

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tightening the gap between model output and observational data. I look forward to seeing future work on this subject.

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