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Interactive comment on "Variational data assimilation for the optimized ozone initial state and the short-time forecasting" *by* S.-Y. Park et al.

Anonymous Referee #1

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The authors have carried out inverse modeling for ozone initial conditions in the capital region of Korea, using 4D-Var data assimilation. ÂăIn this process, they have expanded the capability of the CMAQ optimization code to account for correlation between the prior control variables. ÂăThe optimal initial conditions are also used in a forecast to show improved model agreement with observations not used in the 4D-Var process. ÂăThe manuscript presentation is clear enough to show that these beneficial advances have been made.

However, the grammatical errors throughout make it difficult to assess the scientific validity. ÂăThis paper needs to be edited by a fluent english speaker before a full review can be made. ÂăAs a further critique, the introduction reads as a disjointed literature review of previous data assimilation work. ÂăThe authors need to relate the

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content to the specific motivations of the current paper, connecting the dots for the reader as they go.