Supplemental Material

Exposure Measurement Error in Air Pollution Studies: The Impact of Shared, Multiplicative Measurement Error on Epidemiological Health Risk Estimates

Mariam S. Girguis[a], Lianfa Li[a], Fred Lurmann[b], Jun Wu[c], Carrie Breton[a], Frank Gilliland[a], Daniel Stram[d], Rima Habre[a]

[a]Division of Environmental Health, Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA
[b]Sonoma Technology, Inc, Petaluma, CA, USA
[c]Program in Public Health, Susan and Henry Samueli College of Health Sciences, University of California, Irvine, CA, USA
[d]Division of Biostatistics, Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA

Corresponding Author
Mariam Girguis, PhD, Division of Environmental Health, University of Southern California Keck School of Medicine, SSB 230 2001 N. Soto Street, Suite 102, Los Angeles, CA 90089, Phone +1 (323) 442-2795, E-mail mgirguis@usc.edu

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Figure S1: **NO_x exposure estimates across 120 ensembles for a subset of 50 predictions. Each line represents the ensemble estimate is for a randomly chosen subset of predictions (2 week interval). This figure highlights the variation of possible exposure predictions depending on the specification of the model used for prediction.**

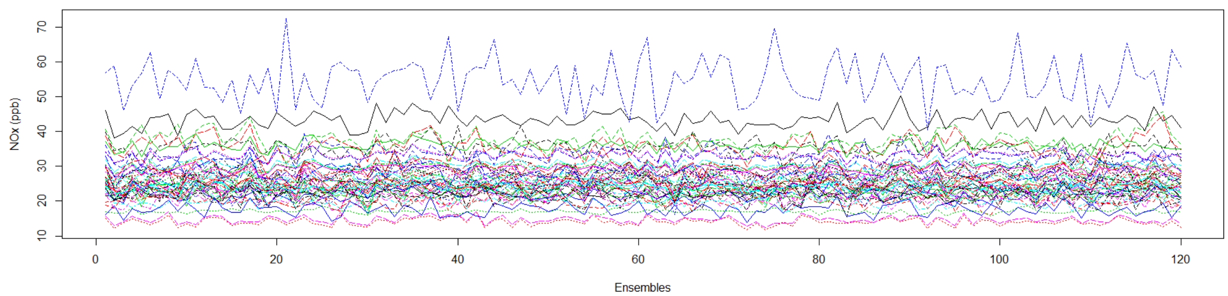

Figure S2. **Demonstrative effect of increasing SMME on the p-value of epidemiological findings using beta estimates using the stage 2 and stage 3 NO_x estimates. Stage 2 estimates (black line) remained insignificant with increasing SMME values. Stage 3 estimates (blue line) became insignificant when SMME reaches a value of 0.25. This value much larger in magnitude than our calculated SMME values. Findings were similar when using a linear model. P value were calculated using a Wald-like test, that accounted for SMME (eq. S1). Variance estimates were held constant for this image.**

$$\mathbf{W} = \hat{b} / \left(SE(b)^2 + b^2\, \sigma_{SM}^2\right). \qquad \text{(S1)}$$