

Comparison of Highly Resolved Model-Based Exposure Metrics for Traffic-Related Air Pollutants to Support Environmental Health Studies

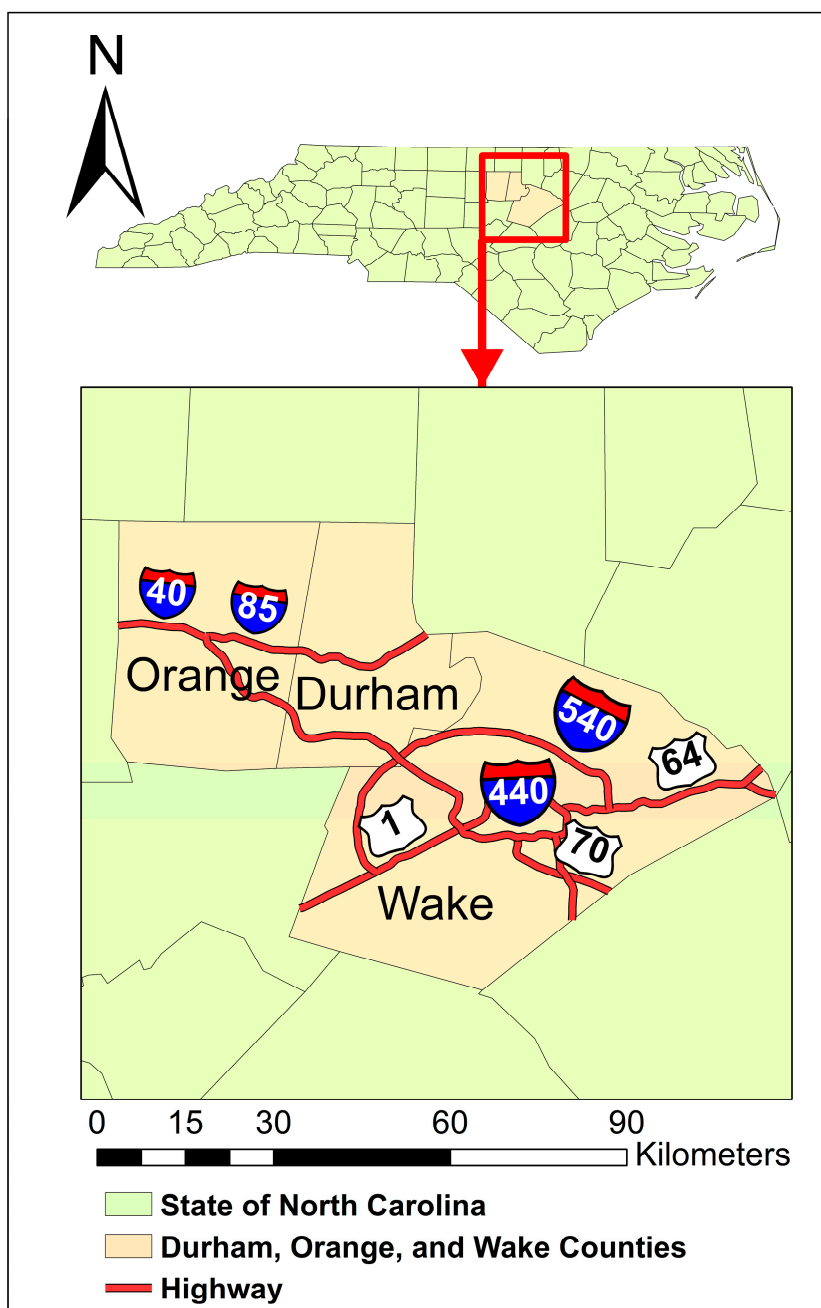


Figure S1. The modeling domain in Durham, Orange, and Wake Counties.

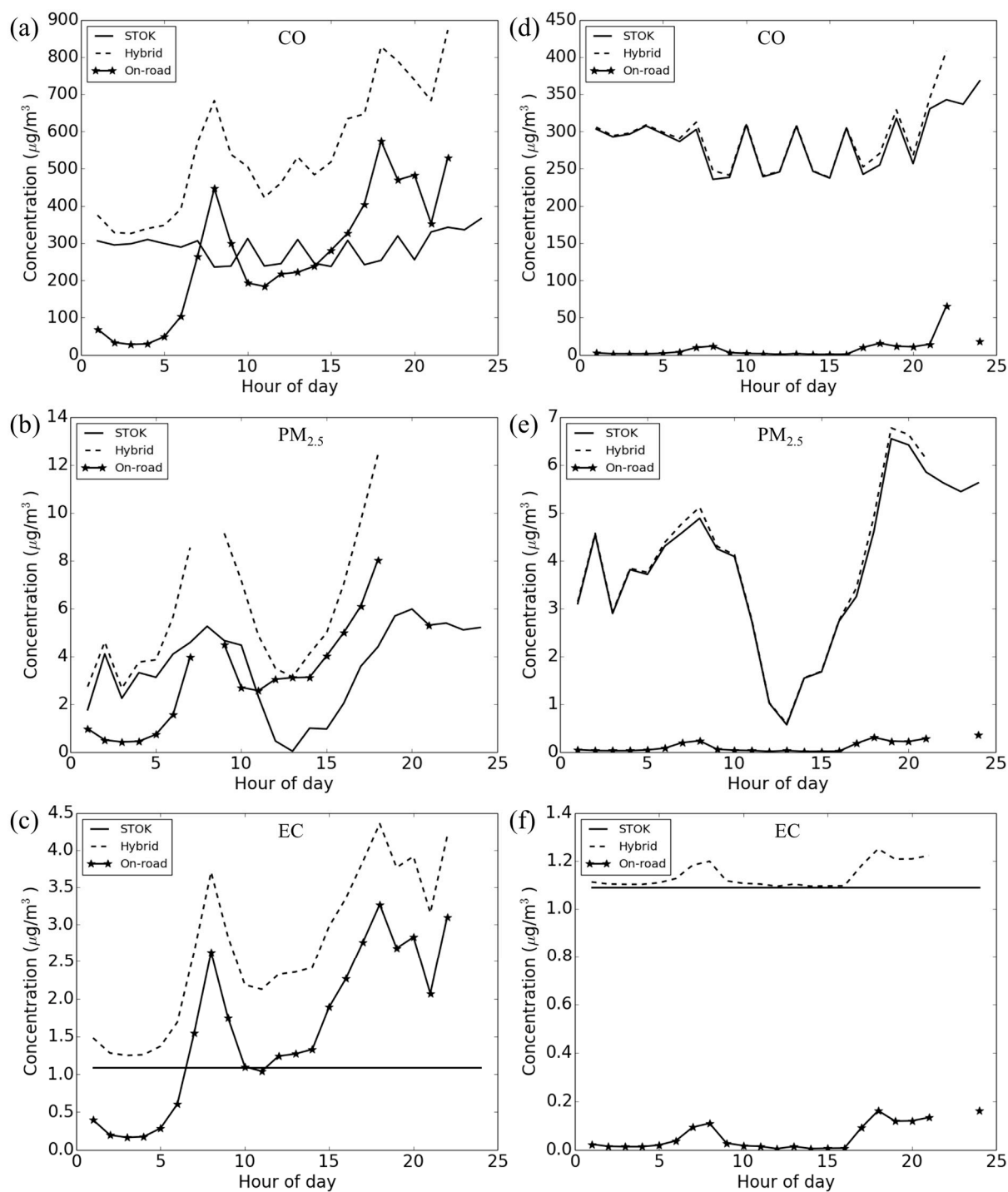


Figure S2. Time series plot on January 3rd for CO (a,d); PM_{2.5} (b,e); and EC (c,f) at a near-road Census block (14.07m from roadway, **left panels**) and a remote Census block (9.57 km from roadway, **right panels**).

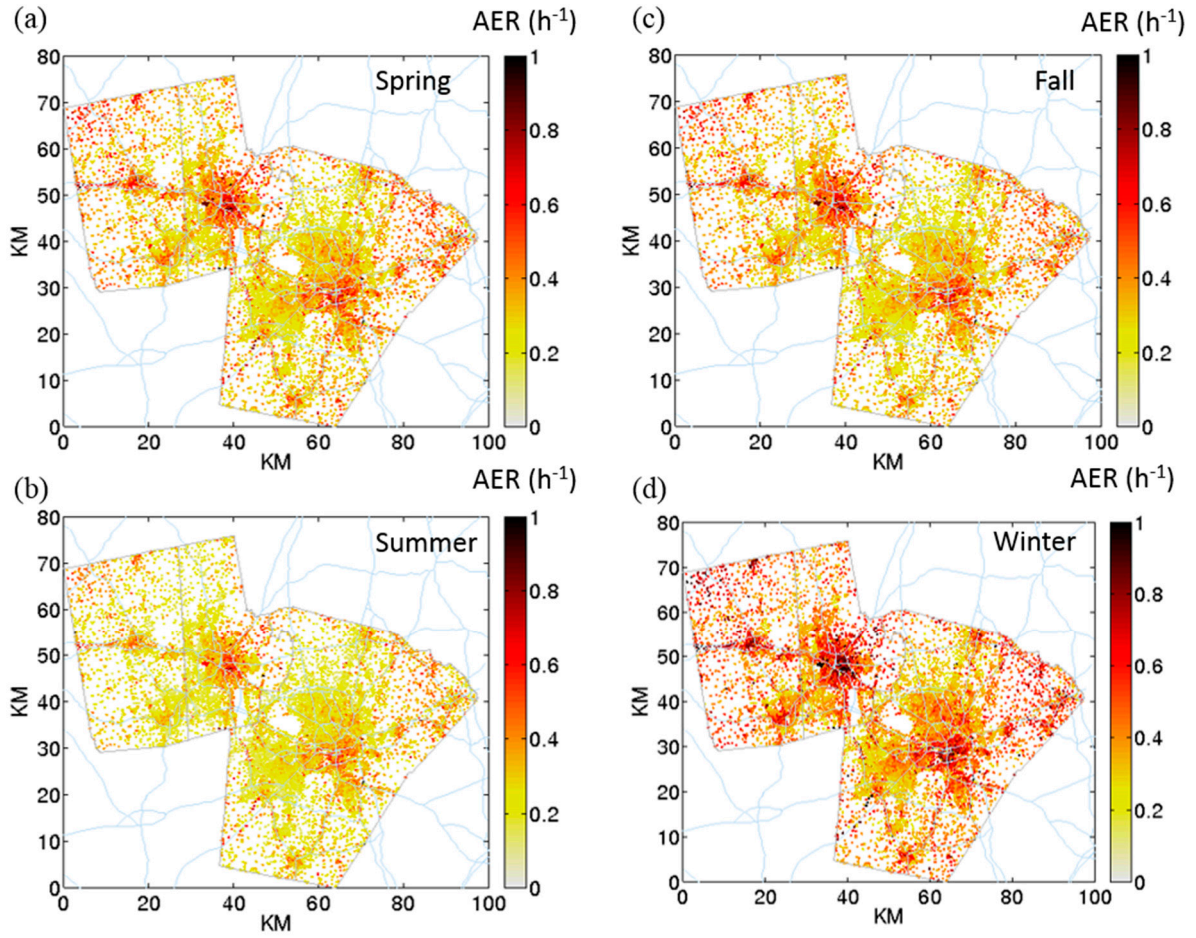


Figure S3. Spatial map for mean AER in (a) spring; (b) summer; (c) fall; and (d) winter. The color bar represents unit in (h^{-1}).

Table S1. Stack coefficient k_s in $\frac{\left(\frac{L}{s}\right)^2}{(\text{cm}^4 \cdot K)}$.

	House Height (Stories)		
	One	Two	Three
Stack coefficient	0.000145	0.000290	0.000435

Table S2. Wind coefficient k_w in $\frac{\left(\frac{L}{s}\right)^2}{\left(\text{cm}^4 \cdot \left(\frac{m}{s}\right)^2\right)}$.

Shelter Class	Number of Stories		
	One	Two	Three
1	0.000319	0.000420	0.000494
2	0.000246	0.000325	0.000382
3	0.000174	0.000231	0.000271
4	0.000104	0.000137	0.000161
5	0.000032	0.000042	0.000049

Table S3. Local sheltering for LBL model.

Shelter Class ¹	Description ¹	Census Block House Density (House/1000 m²)
1	No obstructions or local shielding	<0.025
2	Typical shelter for an isolated rural house	0.025–0.03
3	Typical shelter caused by other buildings across street from building under study	0.03–0.5
4	Typical shelter for urban buildings on larger lots where sheltering obstacles are more than one building height away	0.5–1
5	Typical shelter produced by buildings or other structures immediately adjacent(closer than one building height): e.g., neighboring houses on same side of street, trees, bushes, <i>etc.</i>	>1

¹ ASHRAE Handbook-Fundamentals, 2009.

© 2015 by the authors; licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).