



Supplement of

Simulation of the evolution of biomass burning organic aerosol with different volatility basis set schemes in PMCAMx-SRv1.0

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34 **Table S1.** PMCAMx-SR base case scheme OA prediction skill metrics against
 35 observed values from STN and IMPROVE networks at biomass-impacted sites.

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PM _{2.5} OA	Mean Observed ($\mu\text{g m}^{-3}$)	Mean Predicted ($\mu\text{g m}^{-3}$)	MB ($\mu\text{g m}^{-3}$)	MAGE ($\mu\text{g m}^{-3}$)	FBIAS	FERROR
bbOA > 0.1 $\mu\text{g m}^{-3}$						
April	4.51	3.37	-1.08	2.13	-0.16	0.51
July	5.14	5.58	0.45	3.45	0.03	0.54
September	3.45	4.19	0.74	2.70	0.26	0.62
bbOA > 0.5 $\mu\text{g m}^{-3}$						
April	6.29	4.68	-1.51	2.86	-0.19	0.47
July	6.46	6.46	-0.004	4.43	0.04	0.57
September	4.45	5.60	1.15	4.32	0.34	0.72
bbOA > 1 $\mu\text{g m}^{-3}$						
April	7.91	6.36	-1.58	4.03	-0.14	0.53
July	8.20	8.21	0.01	5.73	0.06	0.58
September	4.23	7.42	3.18	4.96	0.53	0.78

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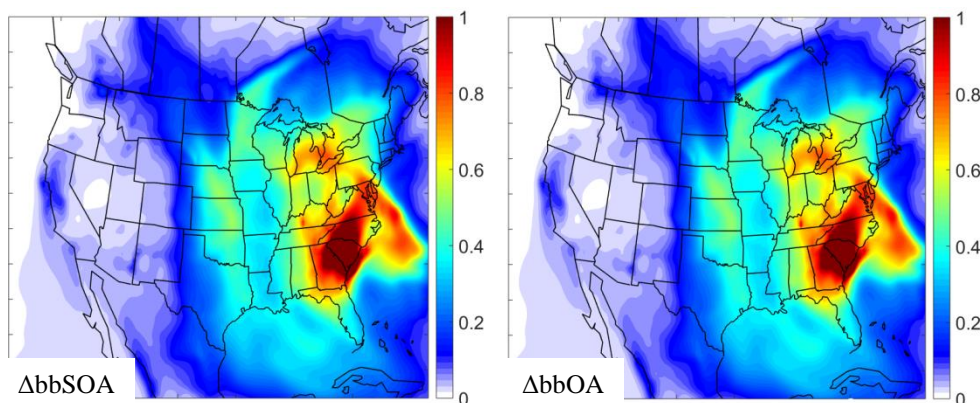
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(a) April

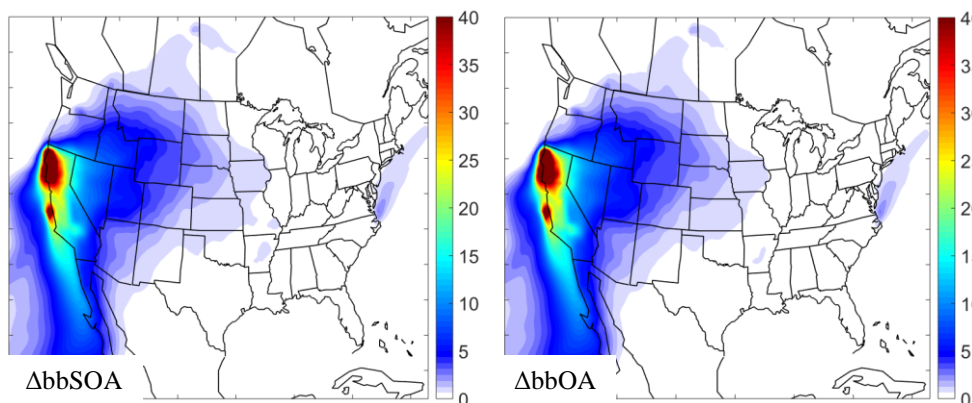


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(b) July

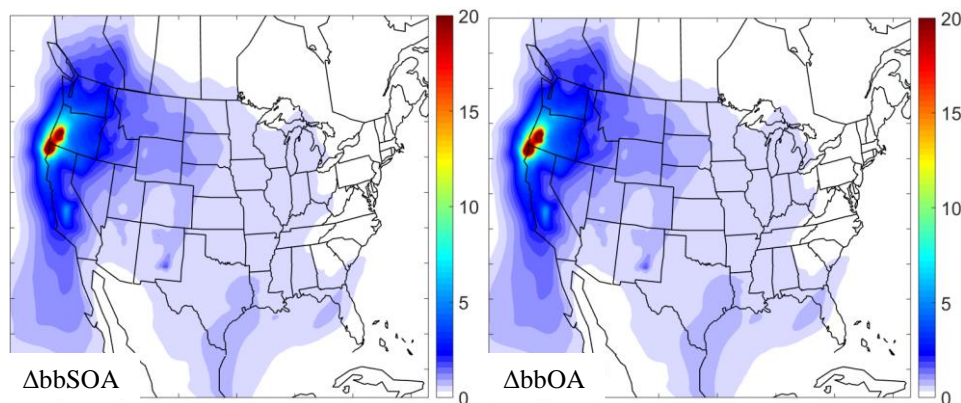


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(c) September



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53 **Figure S1:** Average predicted absolute ($\mu\text{g}\text{m}^{-3}$) difference (alternative aging scheme
54 minus base case) of ground-level $\text{PM}_{2.5}$ total BBSOA and BBOA concentrations from
55 PMCAMx-SR base case and alternative aging scheme simulations during the modeled
56 periods. Positive values indicate that the PMCAMx-SR alternative scheme predicts
57 higher concentrations.

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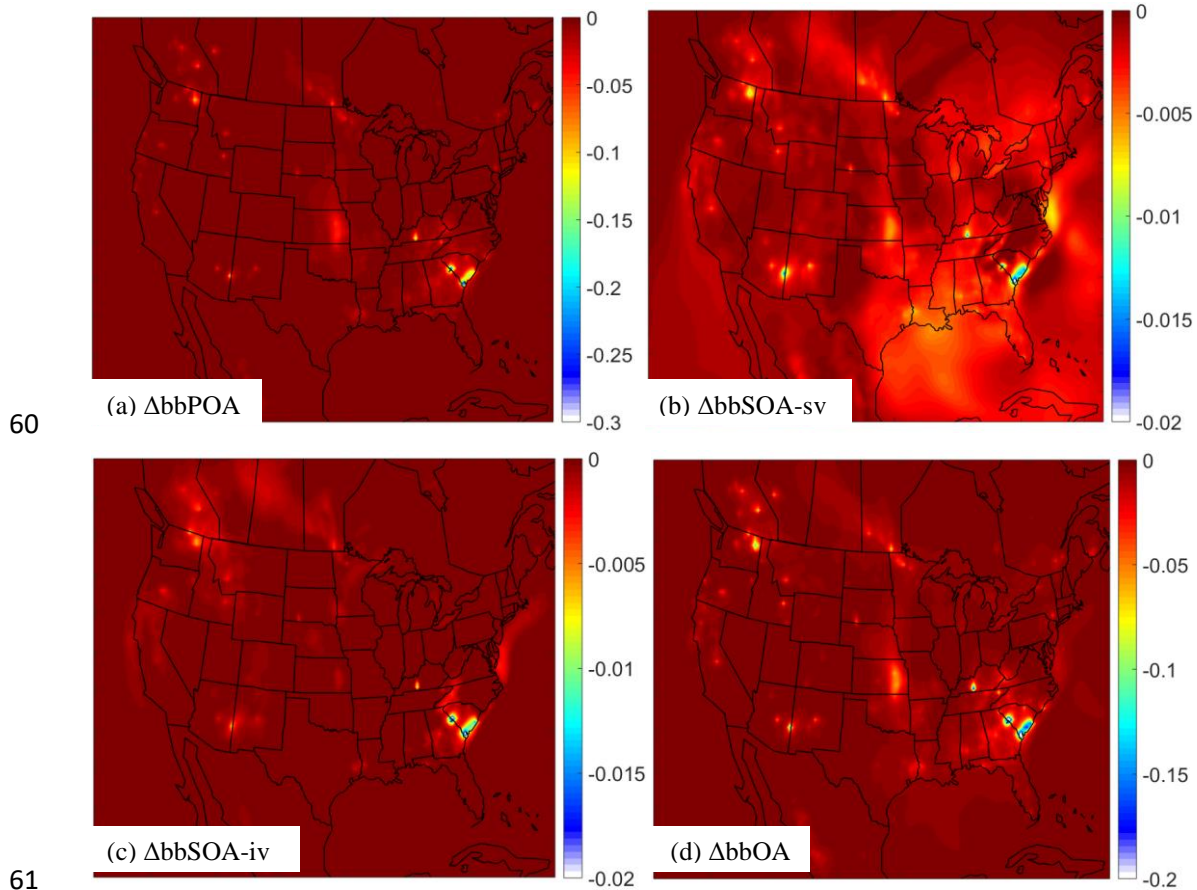


Figure S2: Average predicted increase ($\mu\text{g m}^{-3}$) of the predictions of the base PMCAM_x-SR scheme when the effective enthalpies of vaporization of Ciarelli et al (2017) are used compared to the predictions with the default enthalpies for ground-level PM_{2.5} (a) bbPOA, (b) bbSOA-sv (c) bbSOA-iv and (d) bbOA during April 2008.