



*Supplement of*

**Modeling impacts of ice-nucleating particles from marine aerosols on mixed-phase orographic clouds during 2015 ACAPEX field campaign**

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## Support information

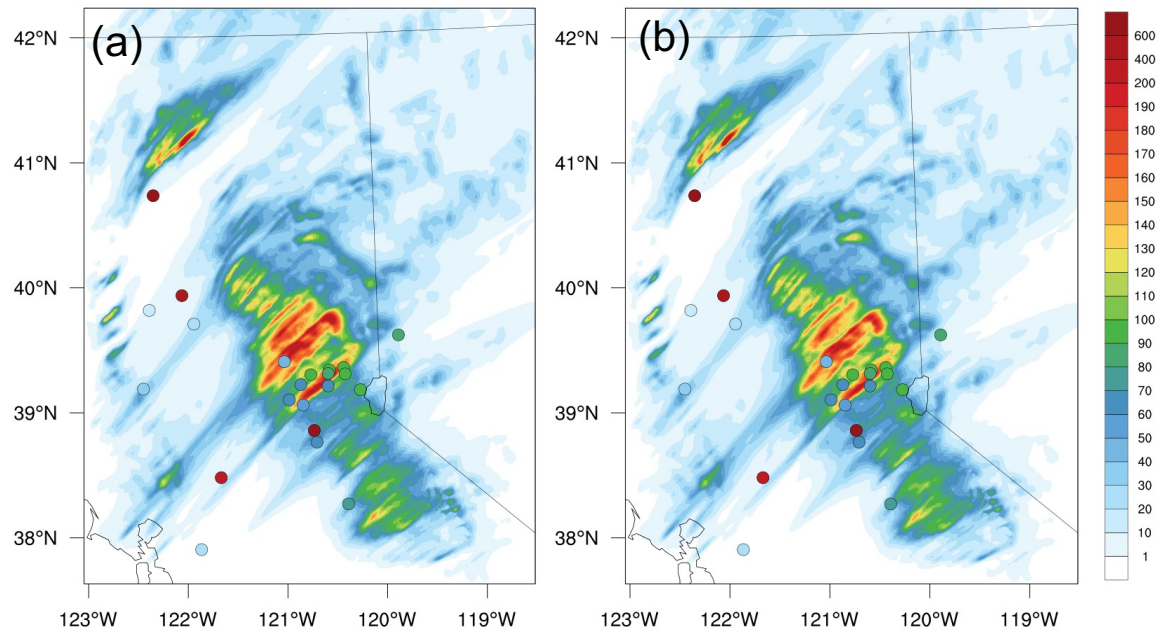
This file includes

Table S1

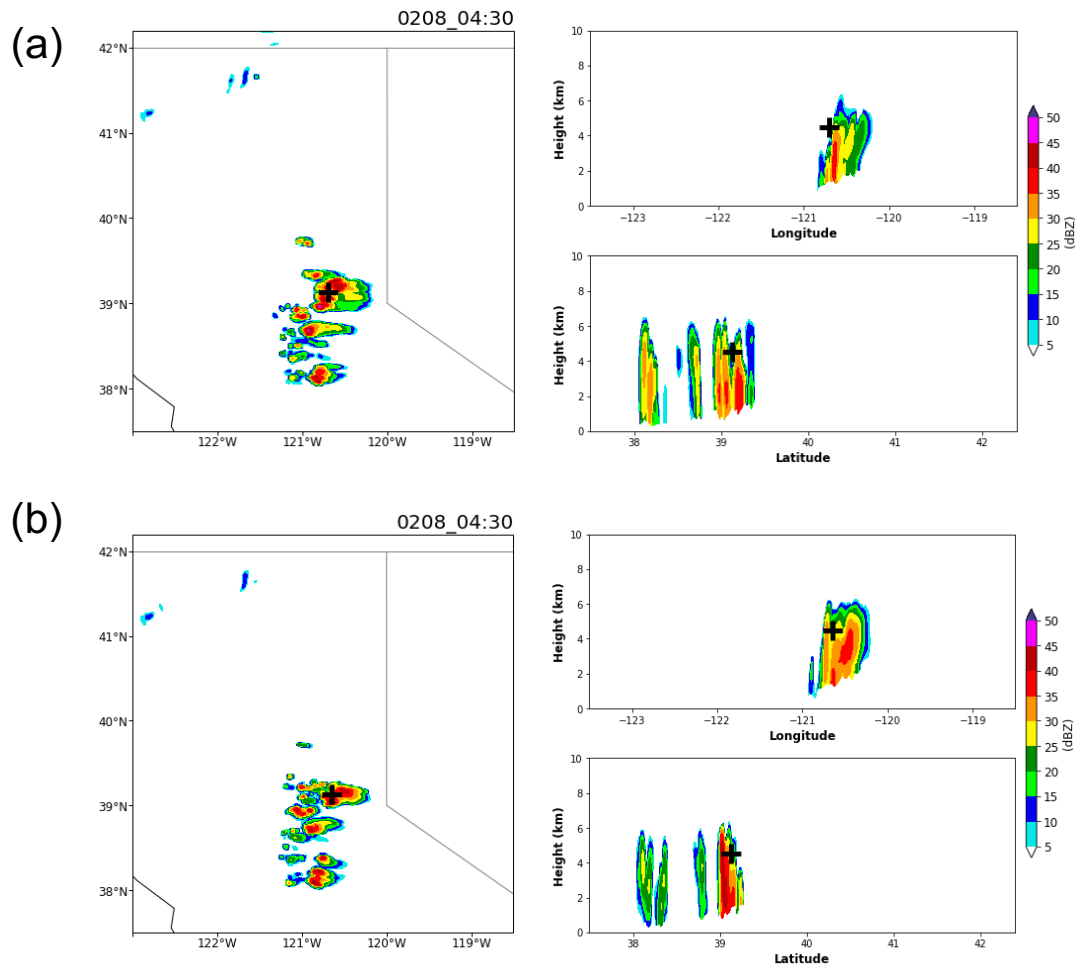
Fig. S1-S3

**Table S1.** Emissions in California based on EPA NEI in 2010, 2012, and 2014 (unit of 1000 tons).

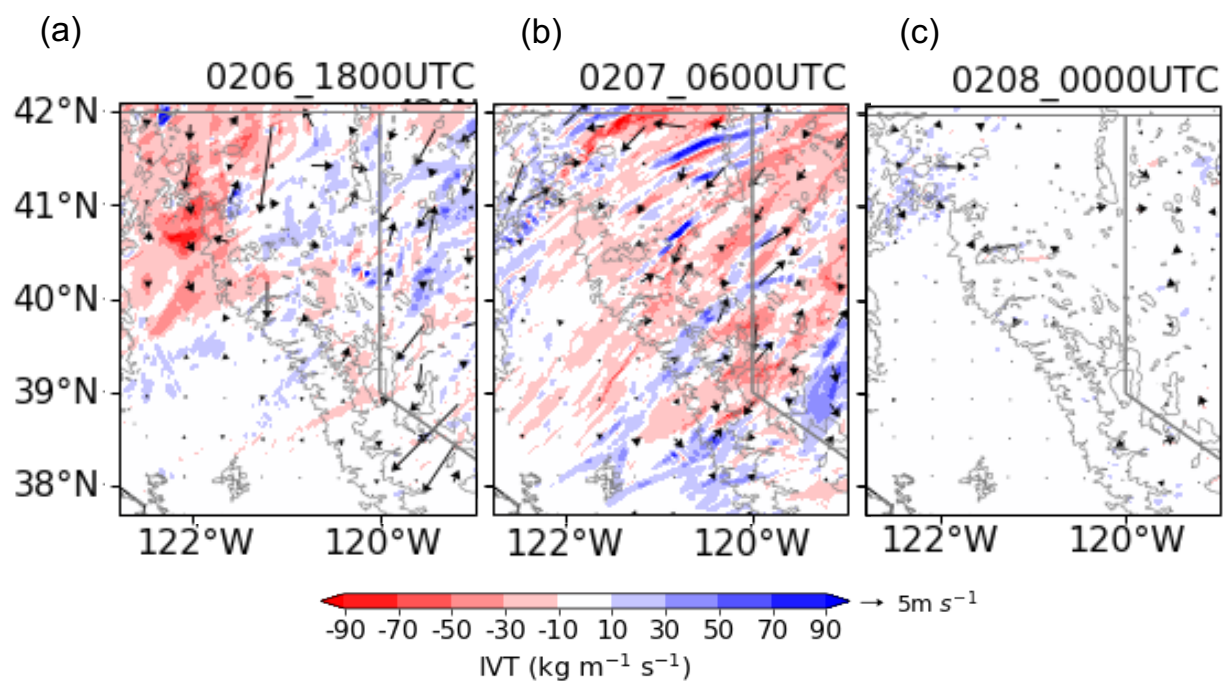
Species	2010	2012	2014
CO	9601.807	3445.952	5607.007
NH <sub>3</sub>	1273.116	850.5079	510.4905
NO <sub>x</sub>	851.5883	674.9153	585.4978
PM <sub>10</sub>	1198.705	469.3941	714.4845
PM <sub>2.5</sub>	712.6443	200.5515	403.0768
SO <sub>2</sub>	75.54085	33.26507	47.19099
VOC	2202.771	842.6653	1471.331



**Figure S1.** Modeled daily accumulated precipitation from (a) the simulation using WRF-Chem-SBM fully-coupled model and (b) the simulation using WRF-SBM with the aerosols hourly interpreted from a coarse resolution WRF-Chem simulation for 07 February during 00:00-23:00 UTC. The overlaid circles are the rain gauge measurements.



**Figure S2.** Same as Figure 5b, except for the simulations of (a) Bigg and (b) DM15.



**Figure S3.** Differences of IVT (color) and wind (vector) between DM15+MC18 and DM15 at a time from the stages (a) before landfall, (b) after landfall, and (c) post-AR.