Supporting Information for

Substantially positive contributions of new particle formation to Cloud Condensation Nuclei under low supersaturation in China based on numerical model improvements

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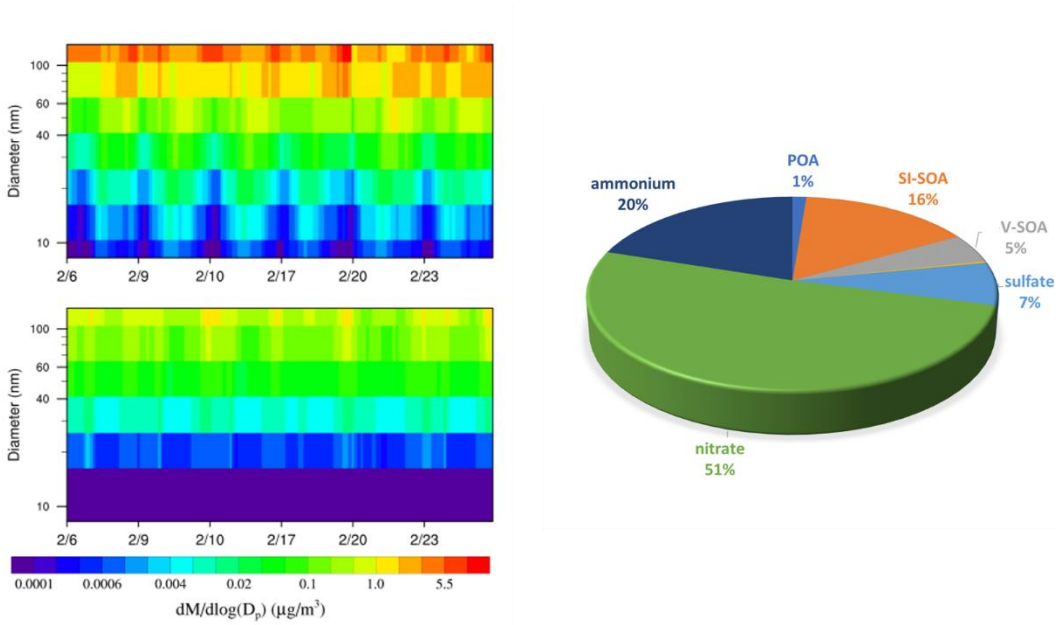

Figure S1 Modeled size resolved mass concentration of primary organic aerosol (POA) in each size bin simulated by (a) MAC and (b) PEP, and the mass fractions of the major chemicals in the 10–40nm particles obtained from the PEP simulations

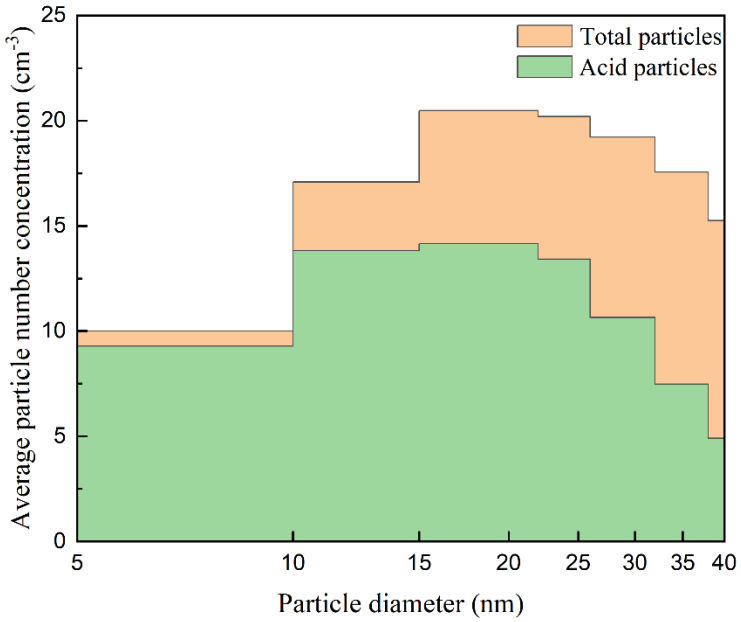

Figure S2 Average particle number concentration of total environmental particles (marked in orange) and acid particles (marked in green) as a function of particle size in Hong Kong from 22 December 2010 to 15 January 2011 as reported by Wang et al. (2014)

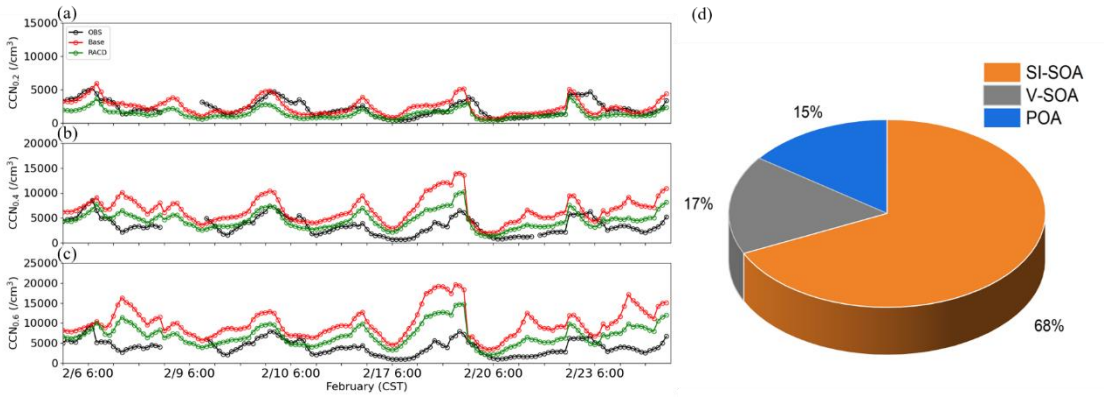

Figure. S3 The time series of (a) $CCN_{0.2\%}$, (b) $CCN_{0.4\%}$ and (c) $CCN_{0.6\%}$ on NPF days simulated Base (marked in red) and RACD (marked in green) as well as from observations (OBS) (marked in black), and (d) the proportion of different components of organic matter in 1–100nm particles, where yellow represents SI-SOA, grey represents V-SOA, and blue represents POA.

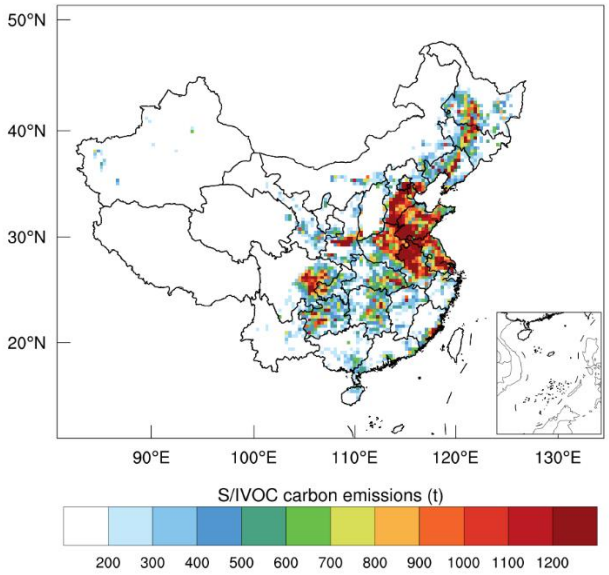

Figure. S4 Spatial distribution of total S/IVOC carbon emissions in mainland China in February 2017

Reference

Wang D-W, Guo H, Chan C K 2014. Diffusion Sampler for Measurement of Acidic Ultrafine Particles in the Atmosphere. Aerosol Science and Technology [J], 48(12): 1236-1246.