Supplement of Enrichment of submicron sea salt-containing particles in small cloud droplets based on single particle mass spectrometry

Qinhao Lin[1], Yuxiang Yang[1,2], Yuzhen Fu[1,2], Guohua Zhang[1], Feng Jiang[1,2], Long Peng[1,2], Xiufeng Lian[1,2], Fengxian Liu[1,2,#], Xinhui Bi[1,*], Lei Li[3], Duohong Chen[4], Mei Li[3], Jie Ou[5], Mingjin Tang[1], Xinming Wang[1], Ping'an Peng[1], and Guoying Sheng[1]

[1] State Key Laboratory of Organic Geochemistry and Guangdong Key Laboratory of Environmental Resources Utilization and Protection, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou 510640, PR China

[2] University of Chinese Academy of Sciences, Beijing 100039, PR China

[3] Institute of Mass Spectrometer and Atmospheric Environment, Jinan University, Guangzhou 510632, PR China

[4] State Environmental Protection Key Laboratory of Regional Air Quality Monitoring, Guangdong Environmental Monitoring Center, Guangzhou 510308, PR China

[5] Shaoguan Environmental Monitoring Center, Shaoguan 512026, PR China

[#] Present at College of Economics and Management, Taiyuan University of Technology, Taiyuan 030024, PR China

*Correspondence to: Xinhui Bi (bixh@gig.ac.cn)

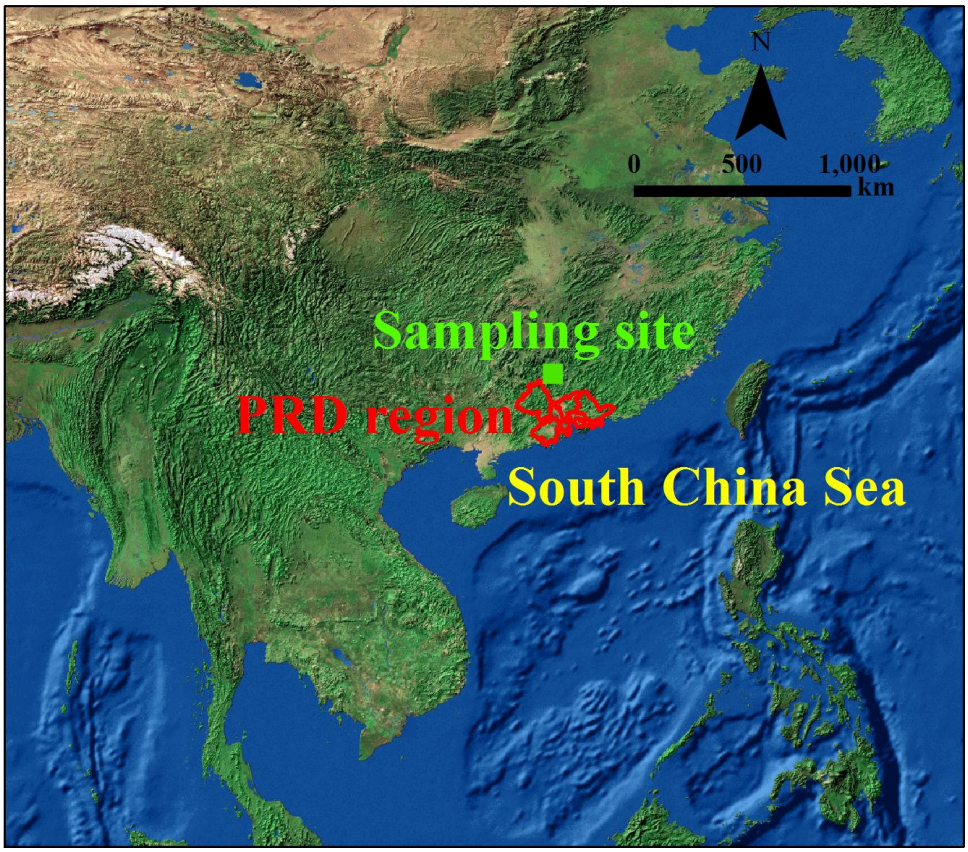


Figure S1. The sampling site.

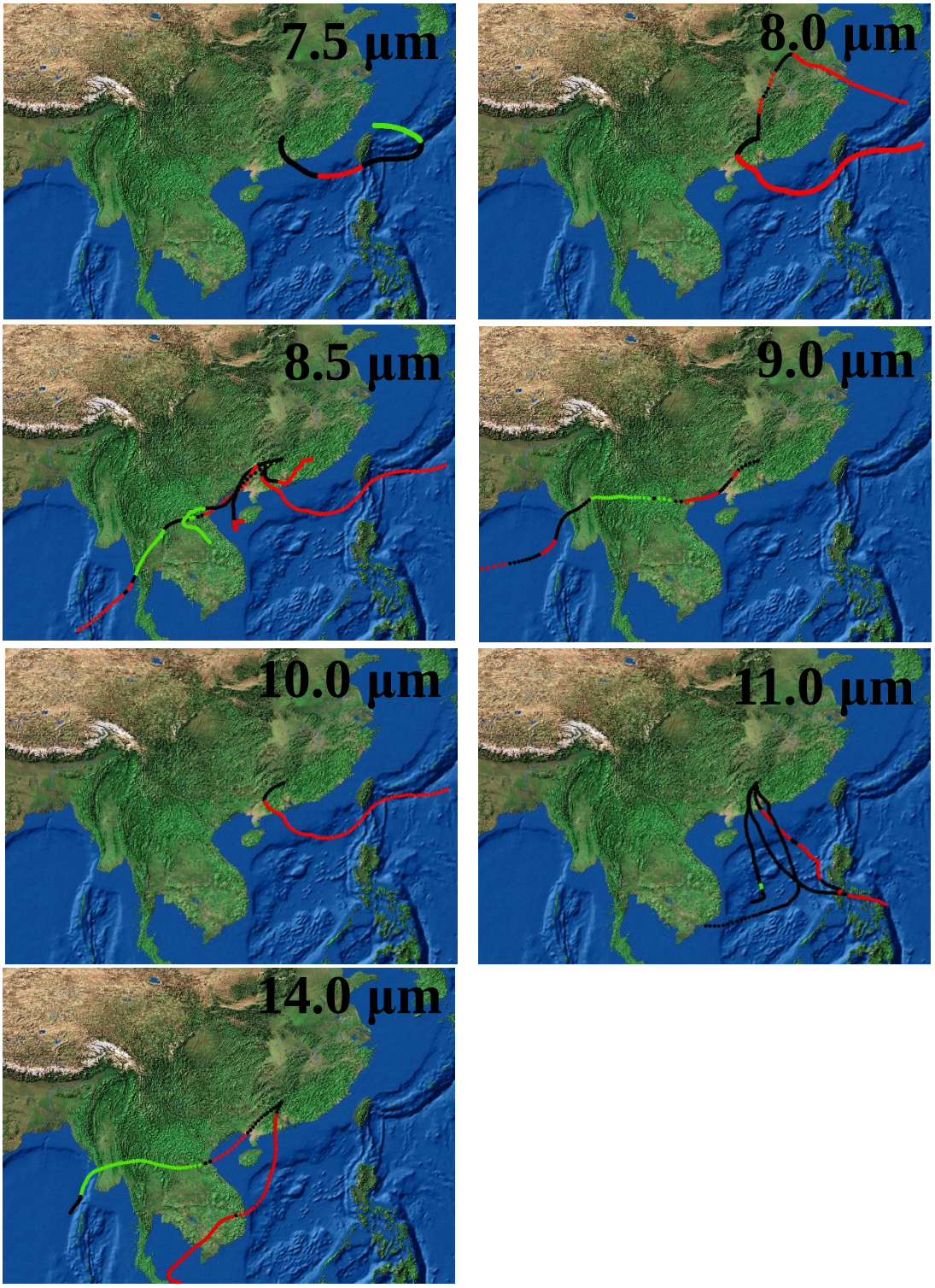


Figure S2. The Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) back trajectories (96 h) for air masses at 1800 m (above sea level) during cloudy events. The red, black, and green colors represent the transport heights of 0-1 km (above sea level), 1-2 km, and above 2 km, respectively.

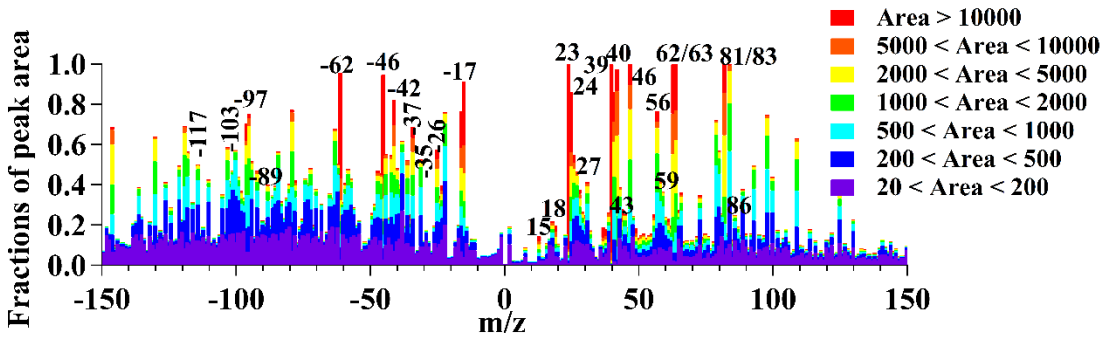
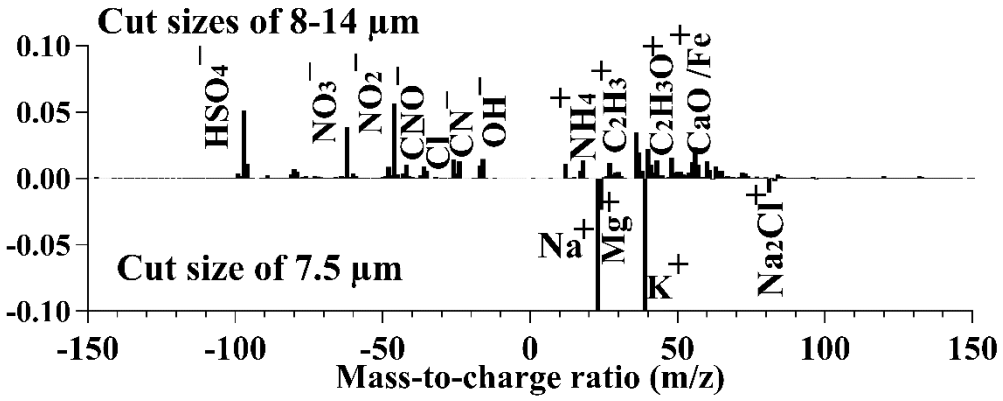


Figure S3. Average digitized mass spectrum of sea salt-containing cloud residues. Inorganic species include sulfate (m/z -97), nitrate (m/z -46 or -62), chloride (m/z -35 or -37), ammonium (m/z 18), magnesium (m/z 24), potassium (m/z 39) and calcium (m/z 40); Organic species include organic nitrogen (m/z -26 or -42), amines (m/z 59 or 86) , CH_3 (m/z 15), C_2H_3 (m/z 27), C_2H_3O (m/z 43), oxalate (m/z -89), malonate (m/z -103), and succinate (m/z -117).



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44 Figure S4. Mass spectral subtraction plot of relative peak areas for the submicron sea
45 salt-containing cloud residues in the cut sizes of 8-14 µm (positive values) versus 7.5
46 µm (negative values).

47 Table S1. The time for the seven cut sizes setting in the GCVI system.

Cut sizes	Start time	End time	Duration (Hour)
7.5 μm	20.05.2017, 21:00	21.05.2017, 14:00	17
8.0 μm	24.05.2017, 14:00	24.05.2017, 20:00	06
8.0 μm	25.05.2017, 01:00	25.05.2017, 12:00	11
8.0 μm	26.05.2017, 00:00	26.05.2017, 05:00	05
8.5 μm	22.05.2017, 19:00	23.05.2017, 07:00	12
8.5 μm	30.05.2017, 02:00	30.05.2017, 08:00	06
8.5 μm	30.05.2017, 19:00	02.06.2017, 21:00	50
9.0 μm	02.06.2017, 21:00	03.06.2017, 14:00	17
10.0 μm	23.05.2017, 08:00	24.05.2017, 00:00	16
11.0 μm	08.06.2017, 01:00	08.06.2017, 08:00	07
11.0 μm	08.06.2017, 18:00	10.06.2017, 17:00	47
11.0 μm	10.06.2017, 19:00	11.06.2017, 08:00	13
14.0 μm	04.06.2017, 12:00	05.06.2017, 12:00	24