Supplement of

Role of atmospheric aerosols in severe winter fog over Indo Gangetic Plains of India: a case study

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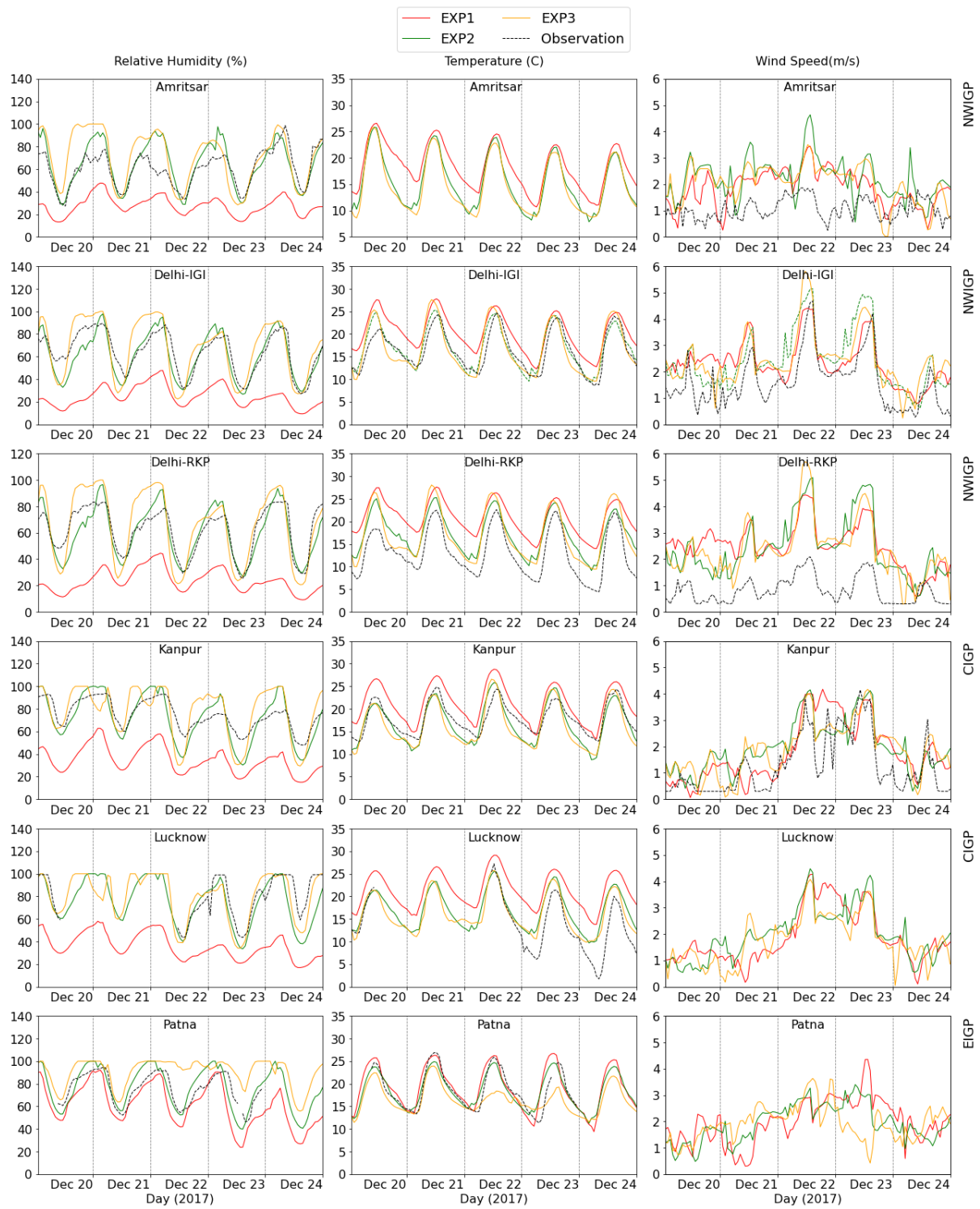
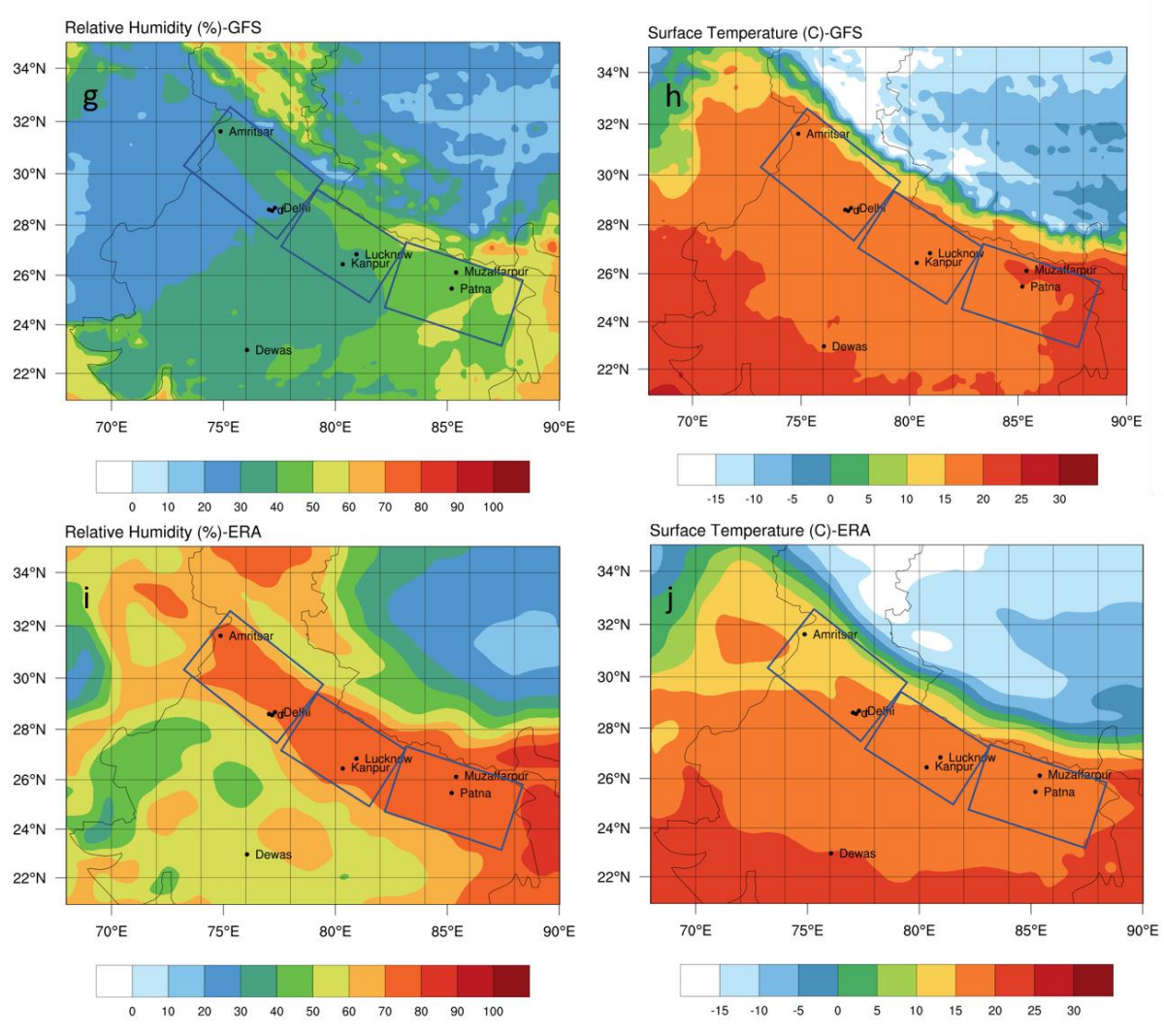
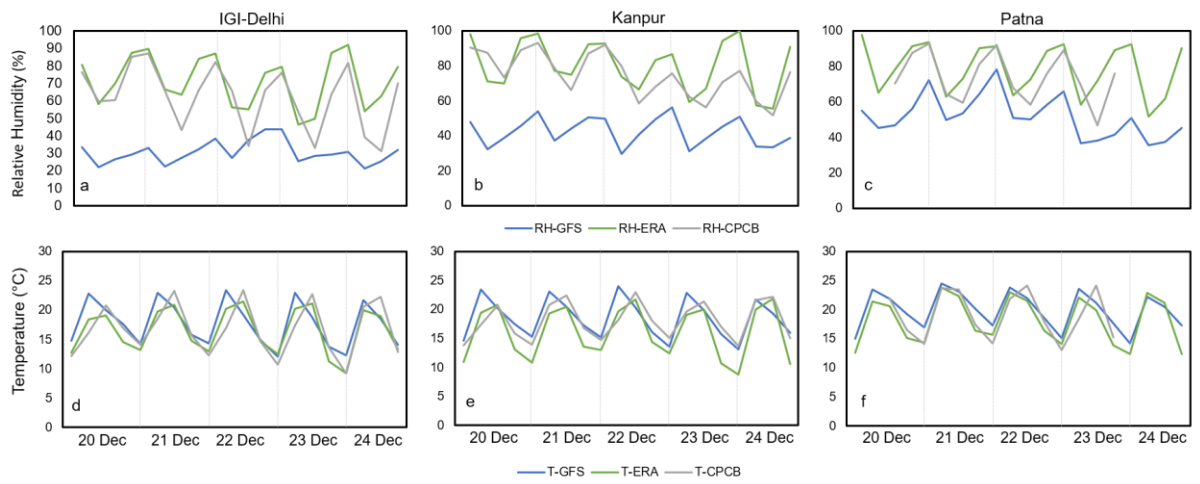


Figure S1 Time series of simulated and observed 2-m relative humidity, 2-m temperature, and 10-m wind speed. Observations are obtained from CPCB (Central Pollution Board of India) except at IGI-Delhi, which is from the WiFEX campaign. The period of study is 20th December 2017 to 24th December 2017.

 Figure S2 (i) Comparison of RH (a-c) and T (d-f) at the surface with measurements from CPCB (Central Pollution Control Board of India) for the stations IGI in Delhi (NWIGP), Kanpur (CIGP), and Patna (EIGP) respectively. (ii) Maps of relative humidity and surface temperature from NCEP Final Analysis (GFS-FNL) datasets (g and h) and ERA-Interim Project (i and j).

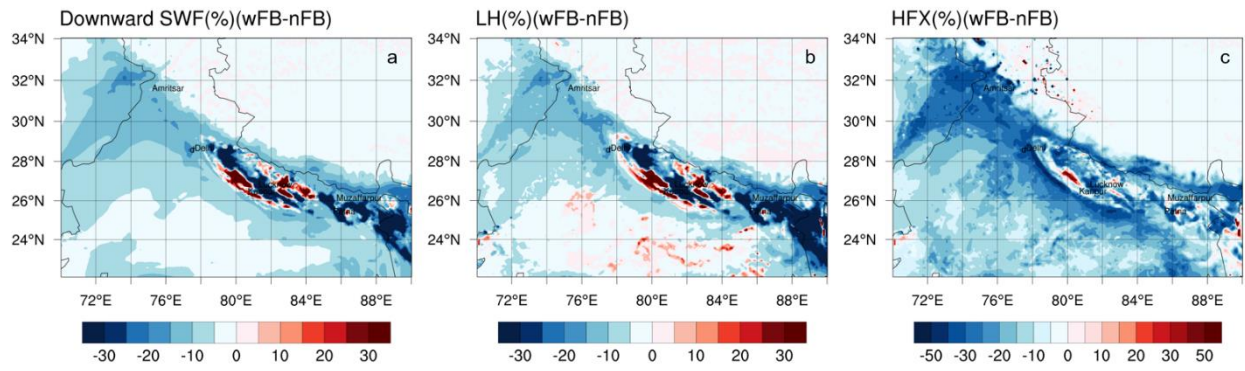



Figure S3 Effect of Aerosol Radiation Feedback on the (a) surface reaching shortwave flux (SWF), (b) latent heat flux (LH), and (c) sensible heat flux (HFX) for December 24, 2017 at local noon (13:30-15:30 IST).

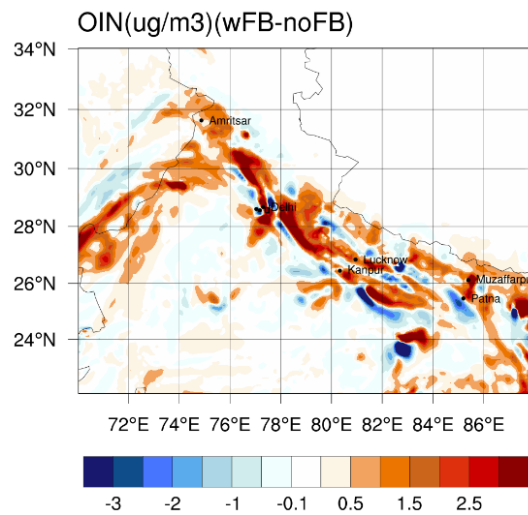



Figure S4 Effect of Aerosol Radiation Feedback on surface OIN concentration for December 24, 2017 at local noon (13:30-15:30 IST).

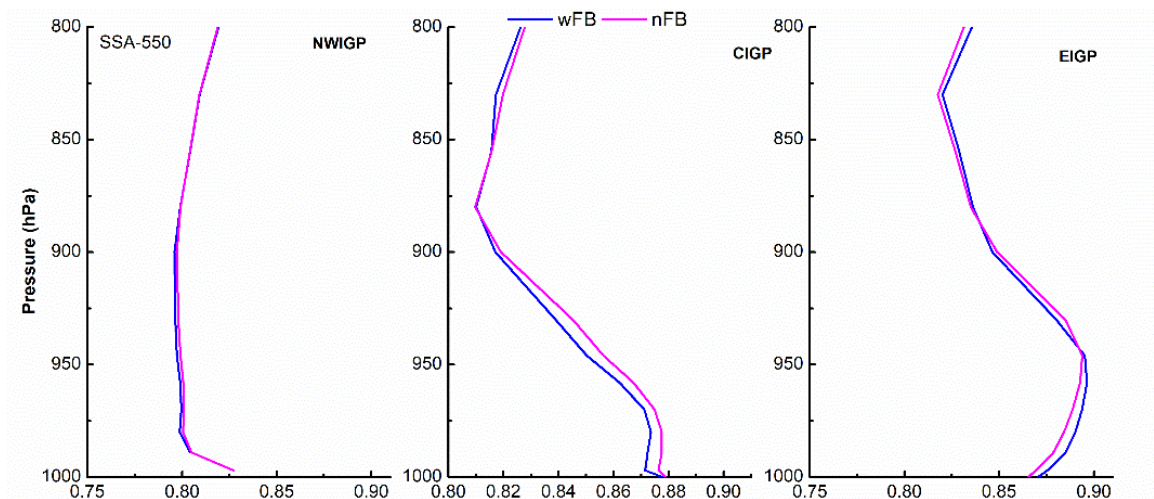



Figure S5 Single scattering albedo (SSA) profile at 550nm over NWIGP, CIGP, and EIGP with and without aerosol-radiation (AR) feedback averaged for December 23 and 24, 2017.

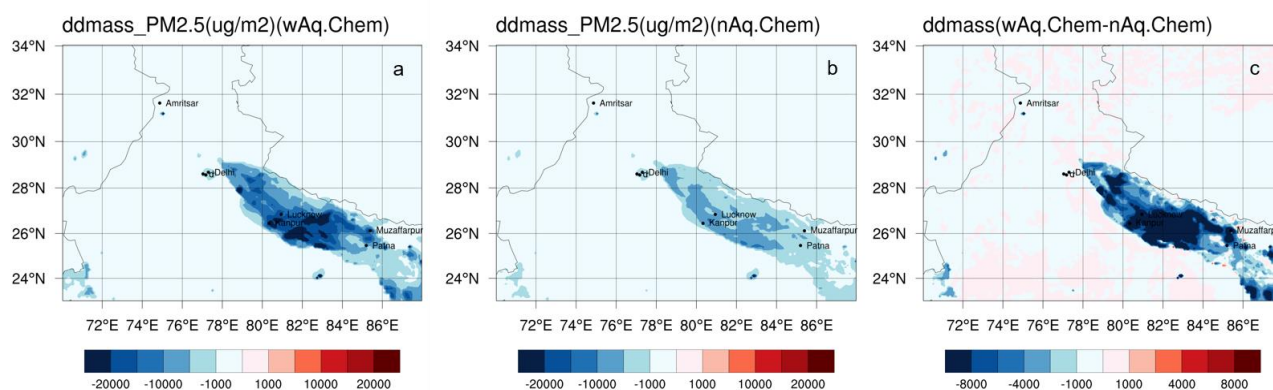



Figure S6 Dry deposition flux of PM$_{2.5}$ (a) with aqueous phase chemistry (b) without aqueous phase chemistry and (c) difference between with and without aqueous phase chemistry over IGP for 24 Dec 2017.