

Figure S1. Himawari 8 RGB composite cloud image overlaid with the MICAPS observation sites (red dots) where the fog was observed ($RH > 90\%$ and $VIS < 1\text{ km}$) at 08:00 from 26 November to 2 December over YRD.

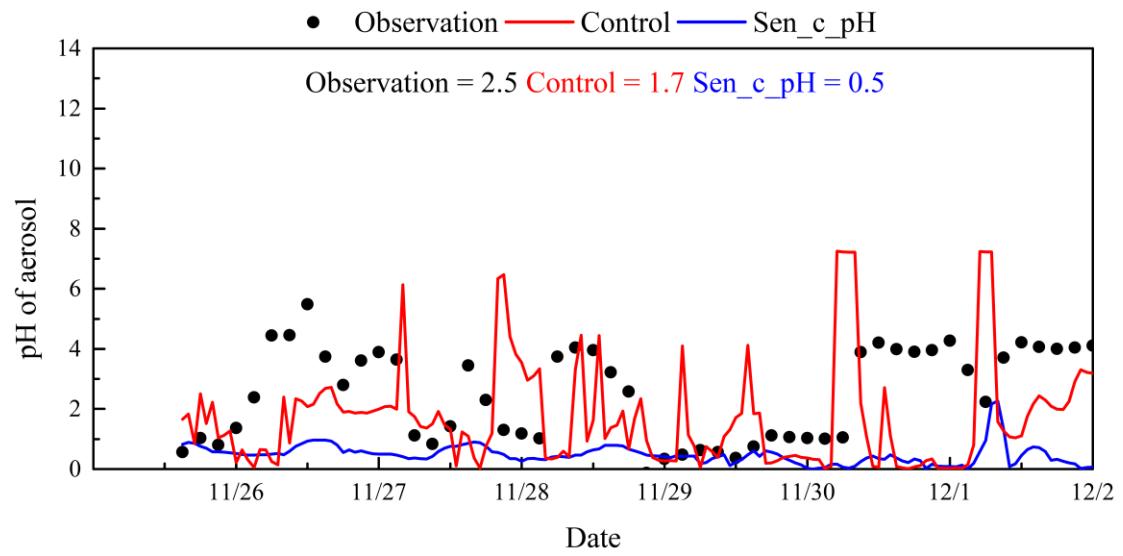


Figure S2. Time series of the observed and simulated (Control and Sen_c_pH) PM_{2.5} pH during the haze-fog event in Nanjing, calculated offline using ISORROPIA II (Fountoukis and Nenes, 2007).

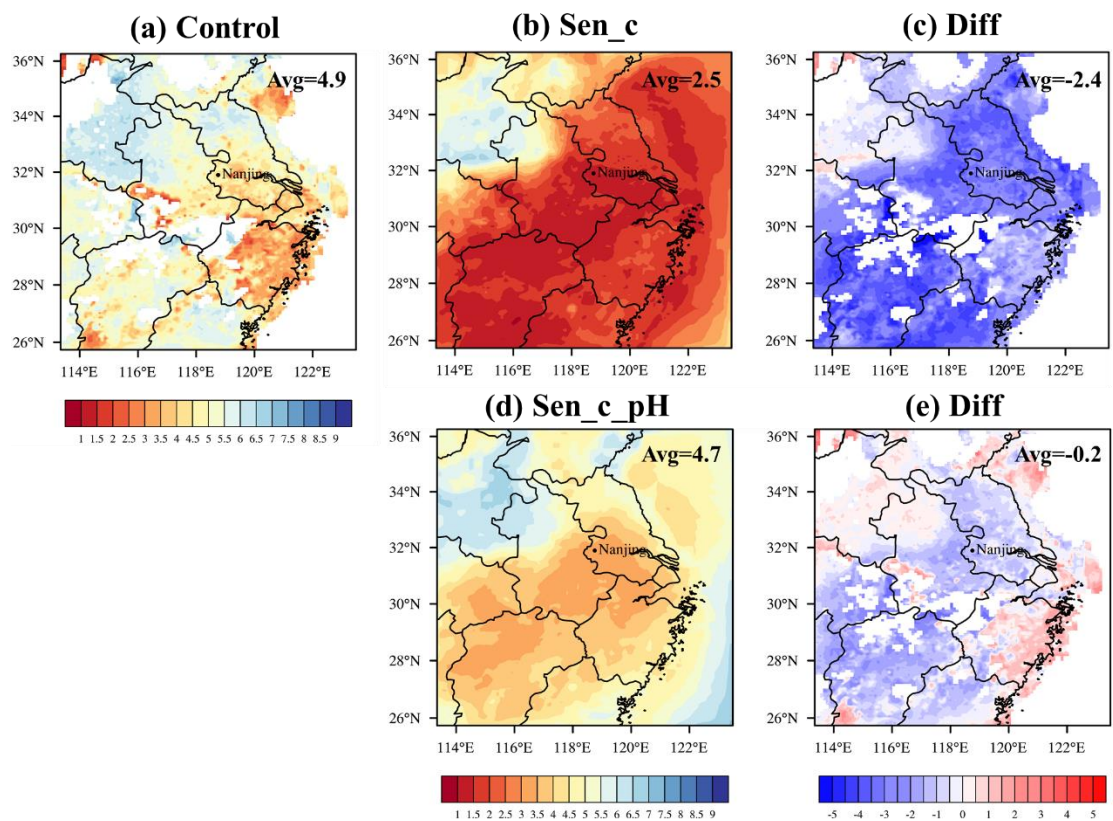


Figure S3. Distribution of the simulated cloud water pH in (a) Control, (b) Sen_c, and (d) Sen_c_pH simulations, and differences of the simulated cloud water pH between the control run and two sensitivity experiments (Sen_c (c), Sen_c_pH (e)) during the haze-fog event over YRD.

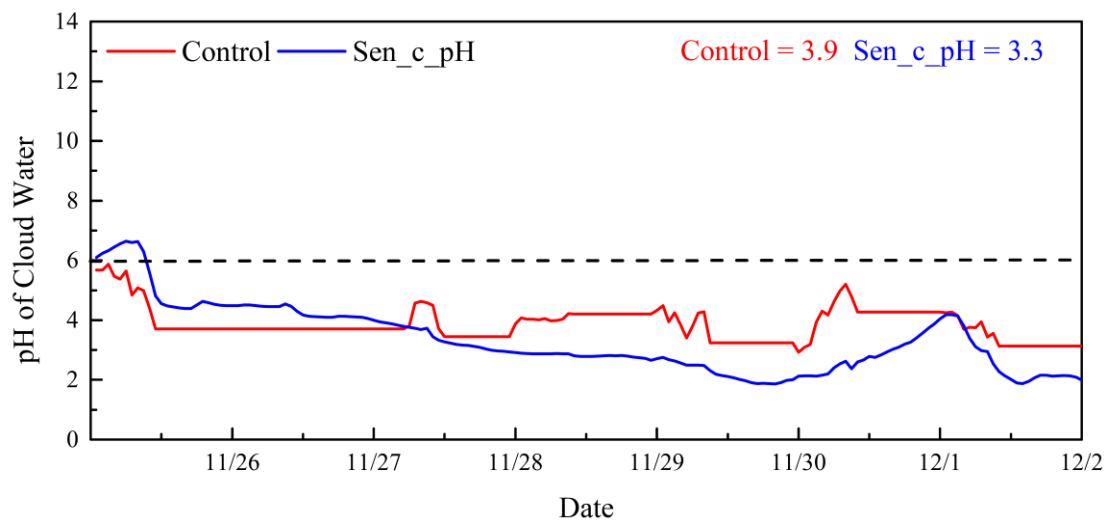


Figure S4 Time series of the simulated (Control and Sen_c_pH) pH of cloud water during the haze-fog event in Nanjing.