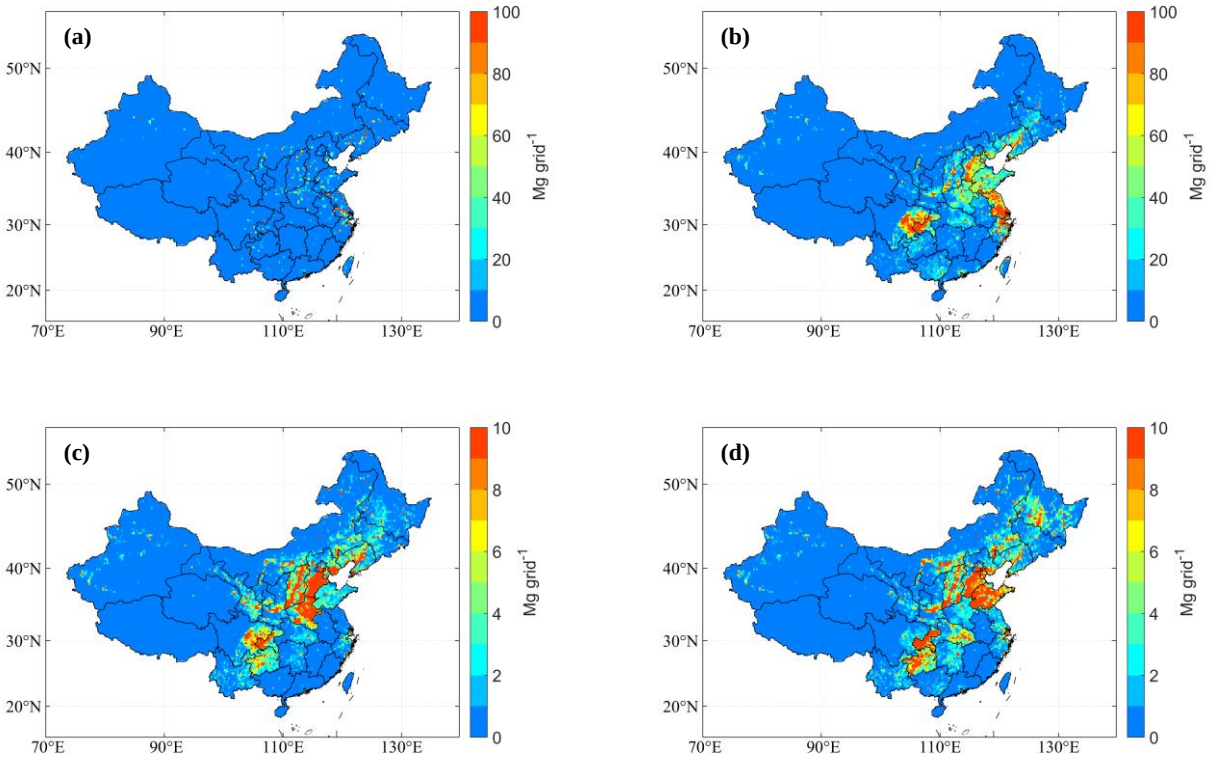
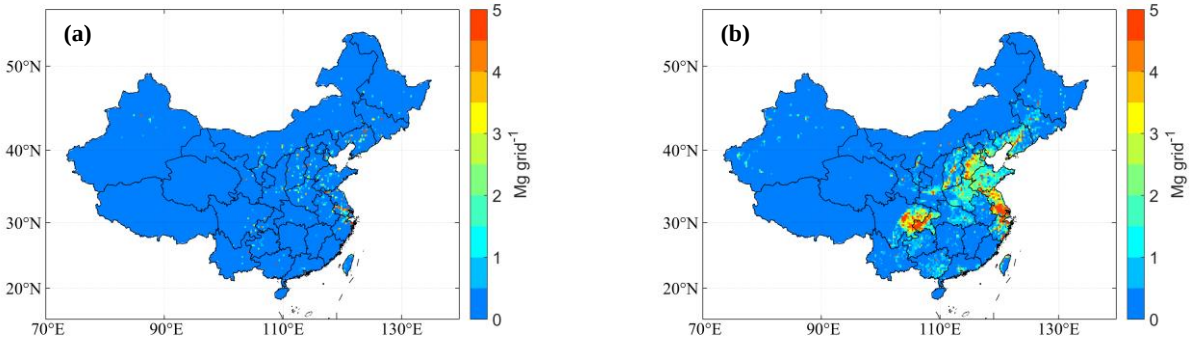


Figure S1 Spatial distribution of hydrogen chloride emissions from coal combustions in four economic sectors: power plant (a), industry (b), residential (c) and other (d).



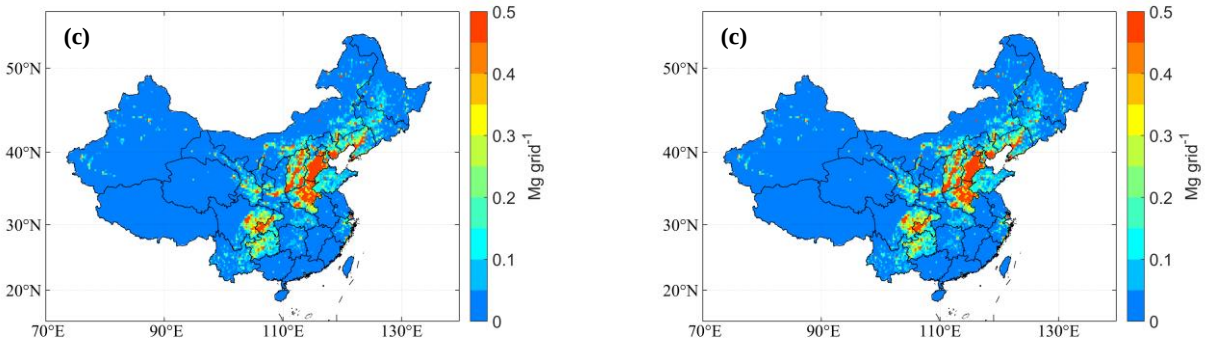


Figure S2 Spatial distribution of molecular chlorine emissions from coal combustions in four economic sectors: power plant (a), industry (b), residential (c) and other (d).

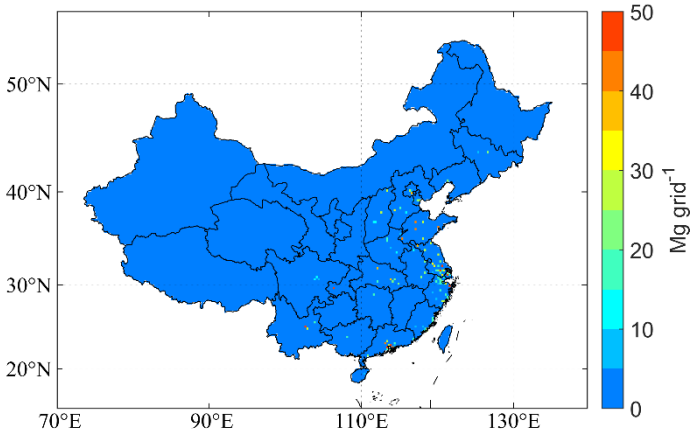


Figure S3 Spatial distribution of hydrogen chloride emission from prescribed waste incineration in 2012.

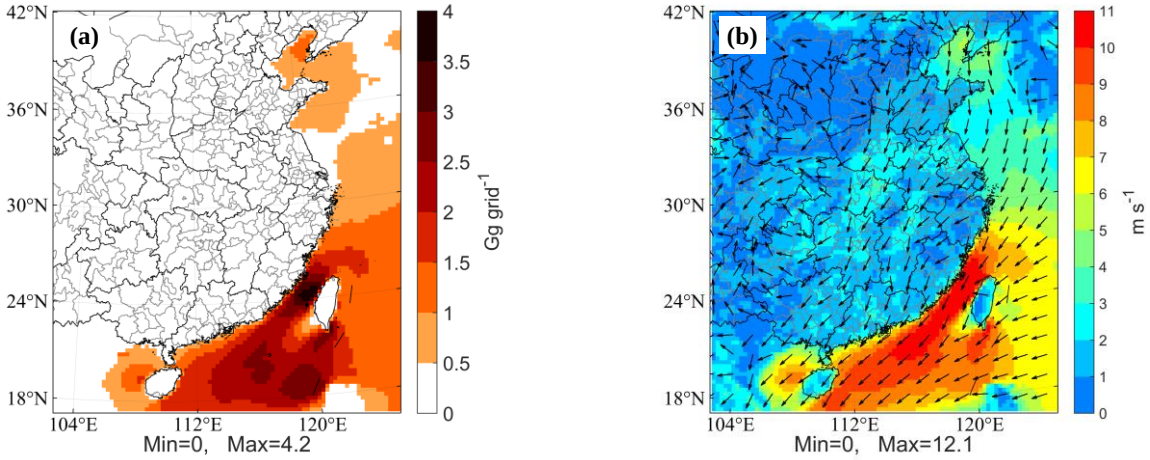


Figure S4 Spatial distribution of dry sea salt emission (a) and wind vector (b) in November 2011. Dry sea salt includes particulate Cl^-, SO_4^{2-}, Na^+, Mg^{2+}, K^+ and Ca^{2+} in coarse and fine mode. High emission was found in South China Sea due to the high wind speed over sea.

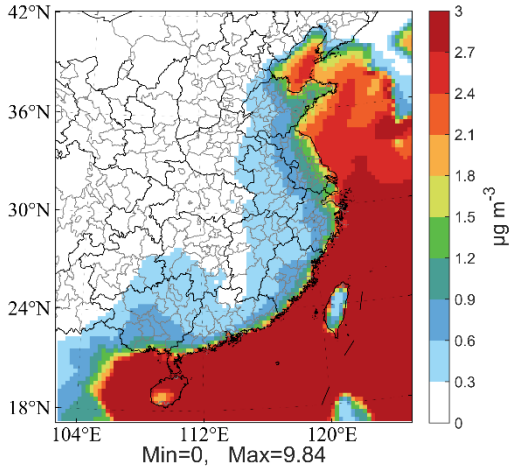


Figure S5 Spatial distribution of the monthly mean concentration of coarse particulate Na^+. Coarse particulate Na^+ is the important composition in sea salt aerosol and is considered to be inactive. This figure can reflect the impact of sea salt aerosol on land.

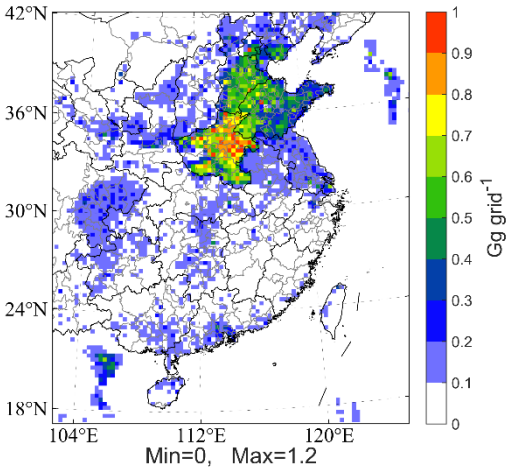


Figure S6 Spatial distribution of the NH_3 emission in November in the MIX emission inventory.

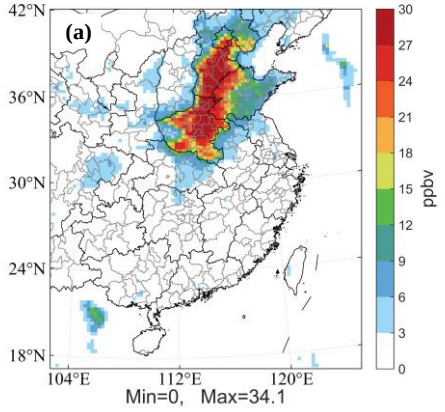
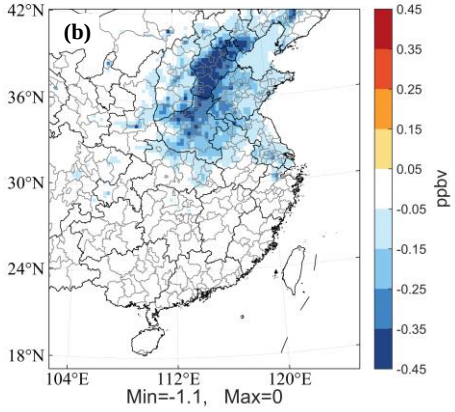
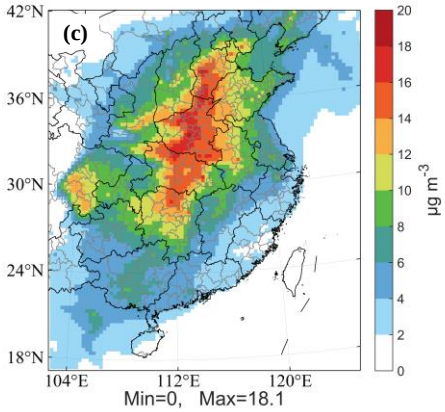
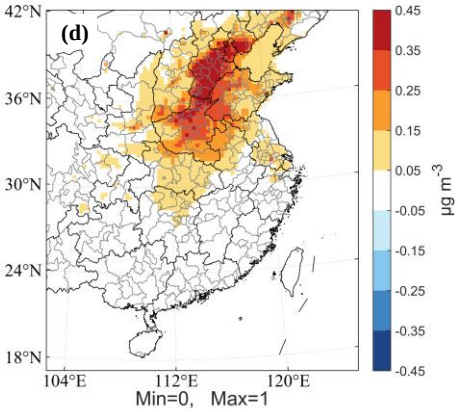
	Base	Base-NoCl
NH_3		
Fine particulate NH_4^+		

Figure S7 Comparison of the monthly mean concentrations of NH_3 and fine particulate NH_4^+ in the Base experiment and the differences (Base minus NoCl).

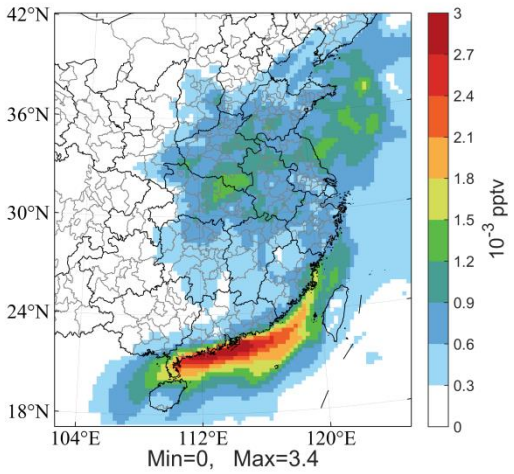


Figure S8 The monthly mean concentrations of Cl_2 in the NoCl experiment.