

Figure R1: (a) Time series of total ammonia (NH₃) emissions from 22nd March to 11th April 2019 in Nanjing site. (b) Time series of total ammonia (NH₃) emissions from 6th to 18th January 2015 in Beijing site. Blue lines represent the MEIC inventory used in Base simulation, red lines represent Online emissions from WRF-SoilN-Chem.

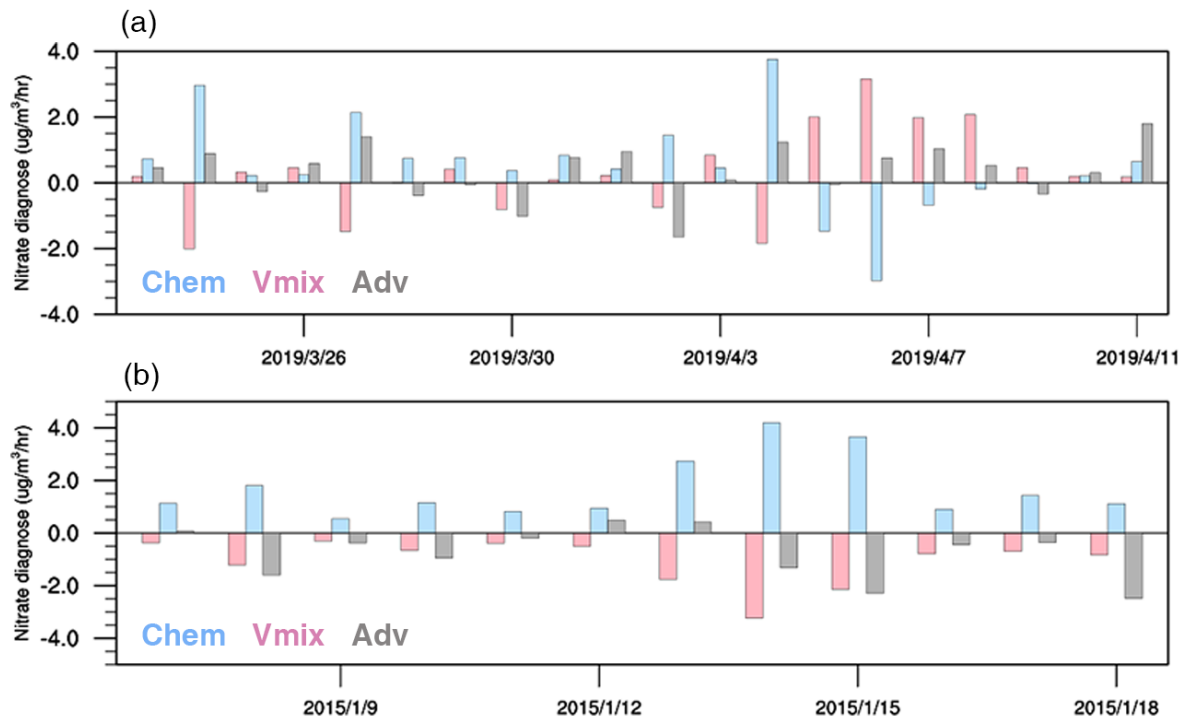


Figure R2. Daily variation of nitrate changes due to chemical production (chem) and PBL evolution (vmix) and advection (adv) calculated from WRF-Chem analysis for the Nanjing (a) and Beijing (b) Case, respectively.

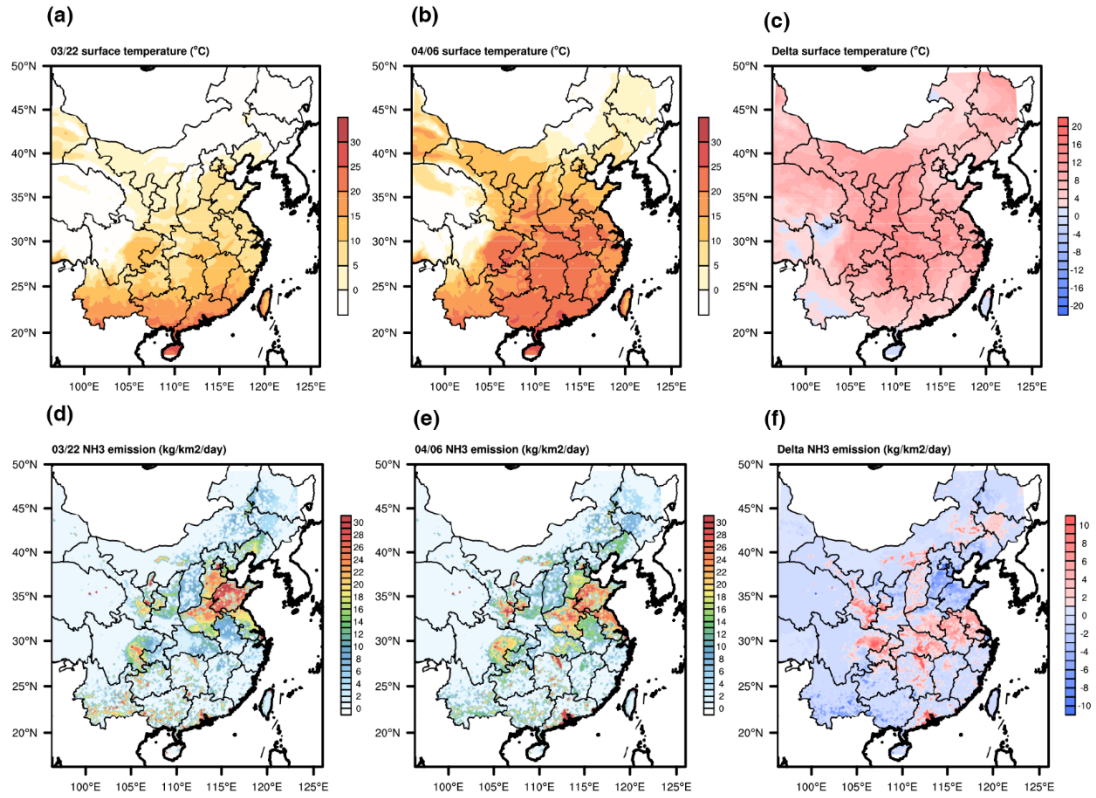


Figure R3. Distribution of surface daily mean temperature of east China on (a) March 22nd and (b) April 6th in 2019 and (c) the difference between these two days. (d)(e)(f) are same as above, but for surface ammonia emission rate.