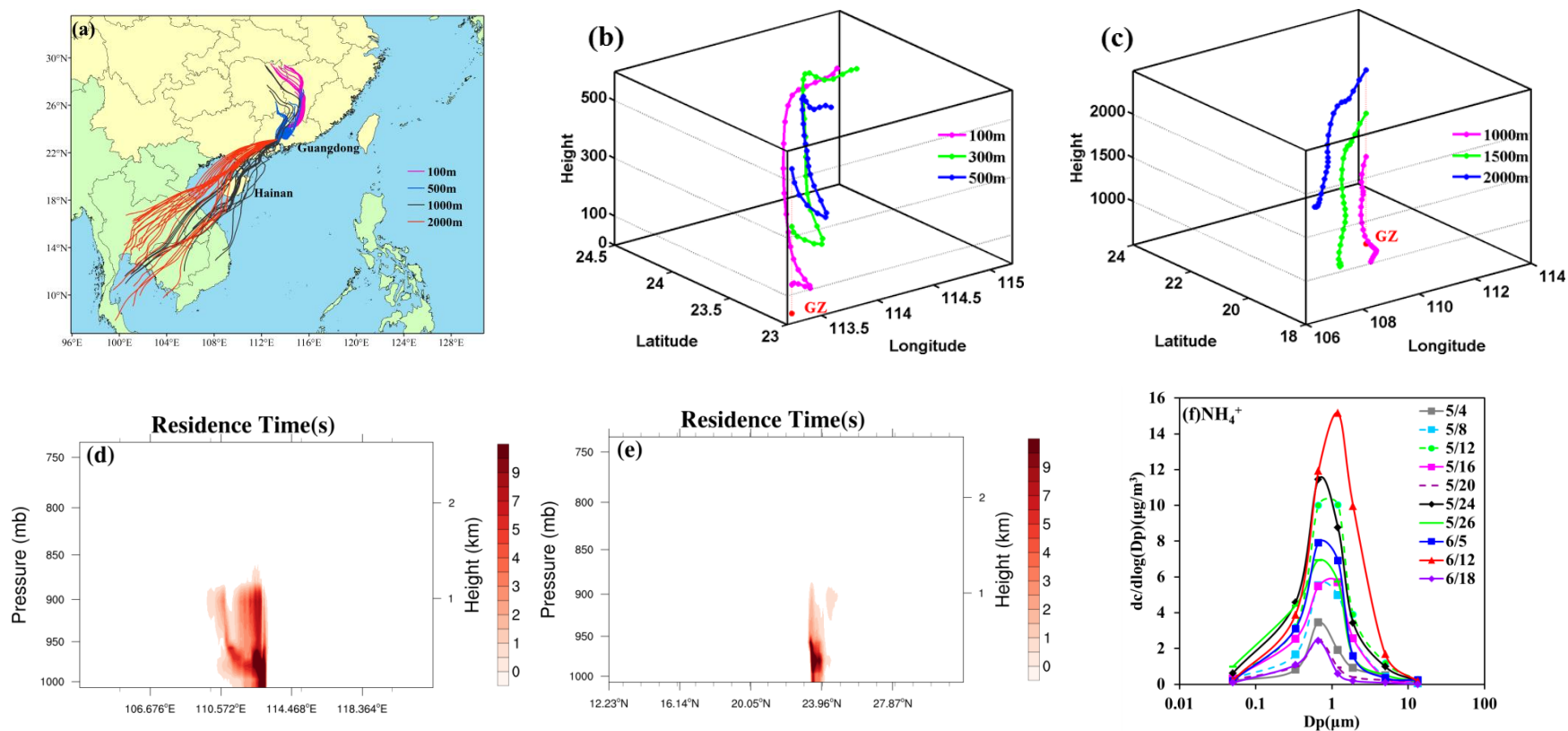


Figure S1. Case study on 12th Jun. in GZ and ZH ((a) 72 h air mass backward trajectories in GZ, (b-c) 3D distribution of 24h air mass back trajectories on lower level (100, 300 and 500m) and on higher level (1000, 1500 and 2000m) in GZ; (d-e) West-east and North-south cross-section of the vertical distribution of the residence times at 23.12 ° and 113.36 °E (just in GZ); (f-i) The mass size distribution of NH_4^+ , OC, EC and K^+ in GZ; (j) The mass size distribution of NO_3^- in ZH)



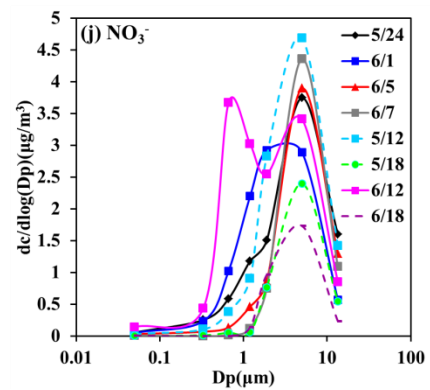
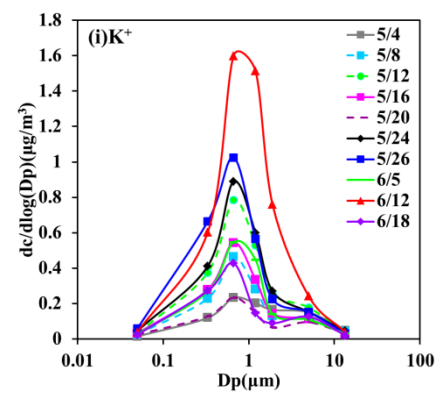
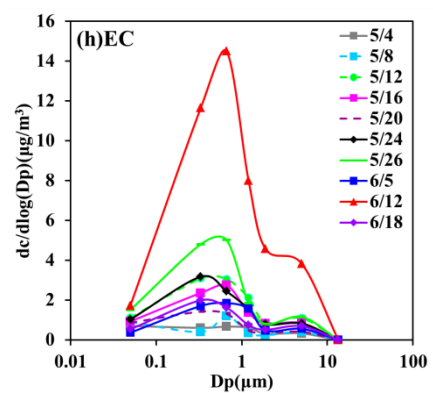
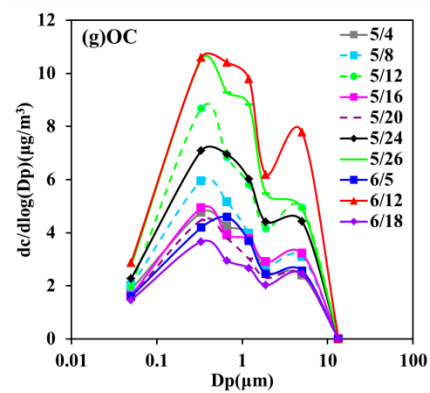


Figure S2. Case study on 1st, 3rd and 5th Jun. in JFM ((a) 72 h air mass backward trajectories; (b-e) The mass size distribution of NH_4^+ , OC, EC and K^+)

