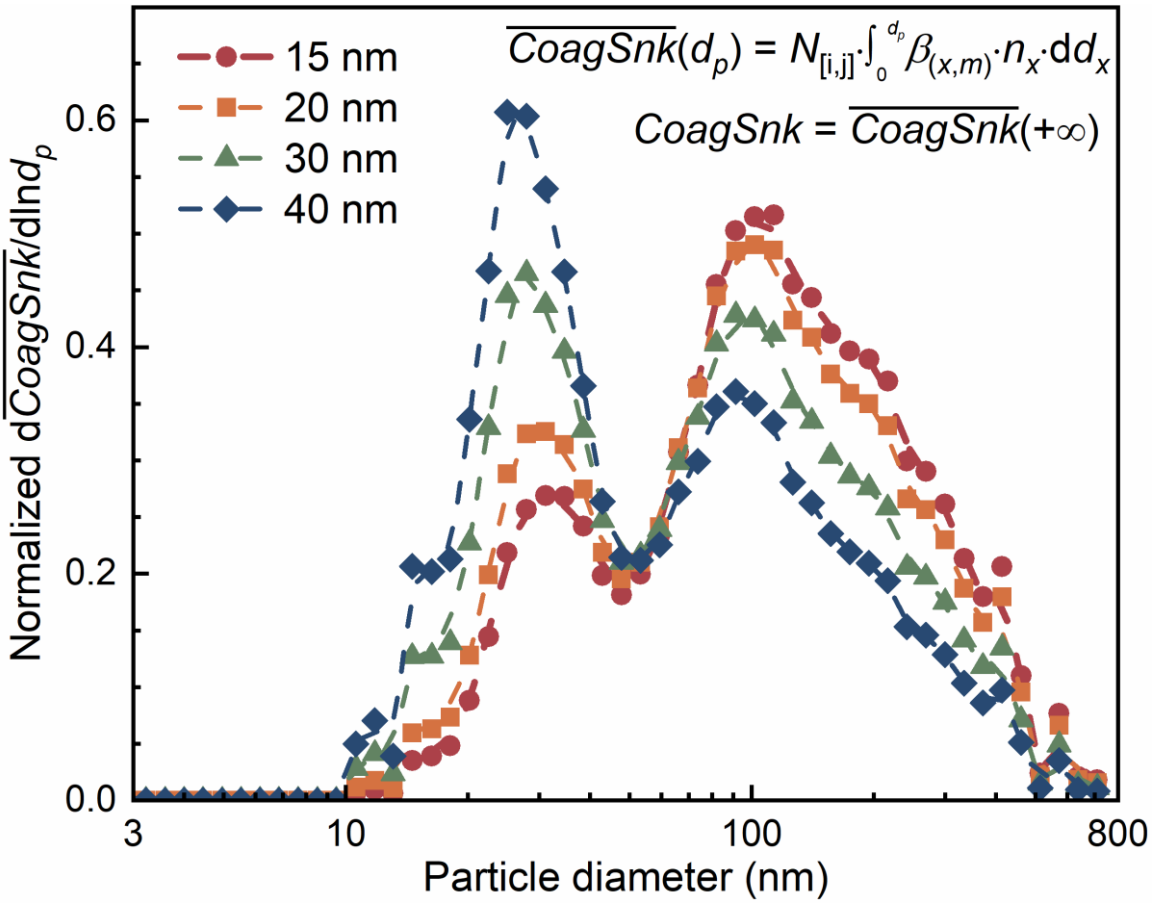

Figure S1: The distributions of the normalized cumulative *CoagSnk* at various particle sizes as the function of the particle diameter (d_p) at 18:00 Mar. 16th, 2015, at the Fukue Island site. The vertical axis indicates the normalized contribution of each particle size bin to the *CoagSnk* and the contribution is normalized by dividing the *CoagSnk*. The subscripts i and j $CoagS_{[i,\ j]}$ indicates the concerned particle size range from d_i to d_j.

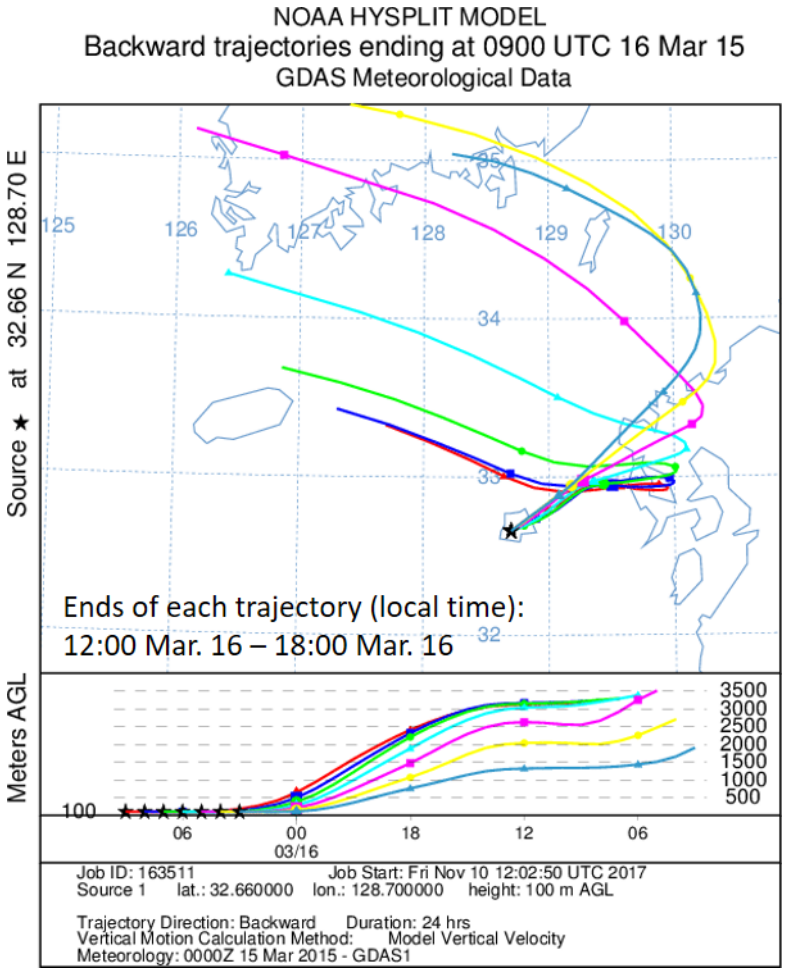

Figure S2: The backward trajectories of the air masses arriving at the Fukue Island on Mar. 16th, 2015.

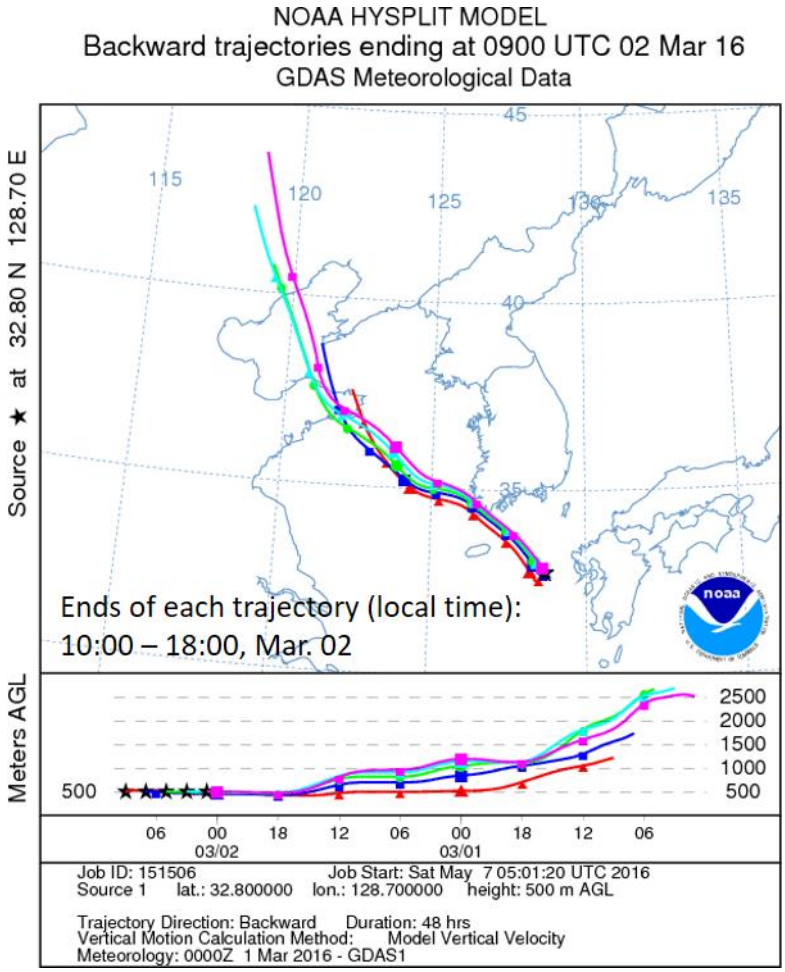

Figure S3: The backward trajectories of the air masses arriving at the Fukue Island on Mar. 2nd, 2016.

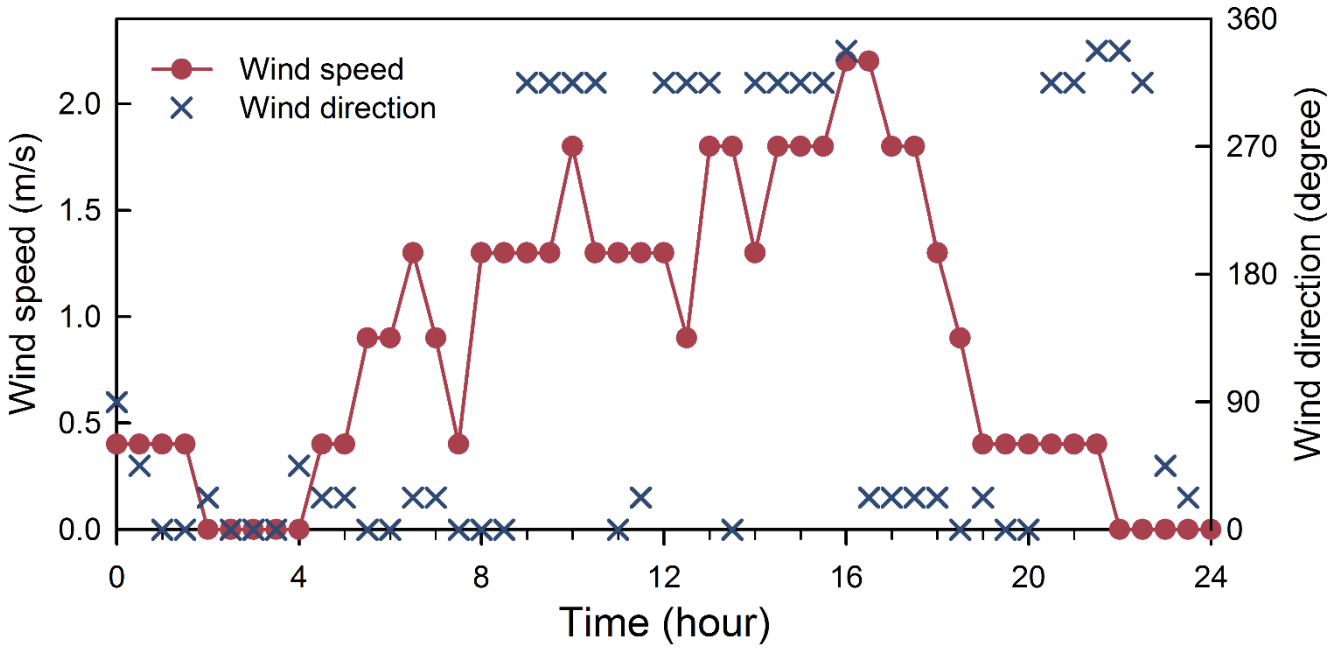

Figure S4: The wind speed and direction on Mar. 23rd, 2016, in urban Beijing.