This file contains three supplementary figures that provide additional detail to support and further clarify the analyses.

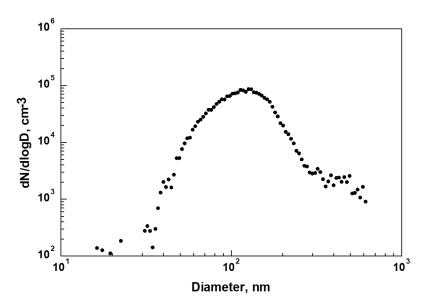
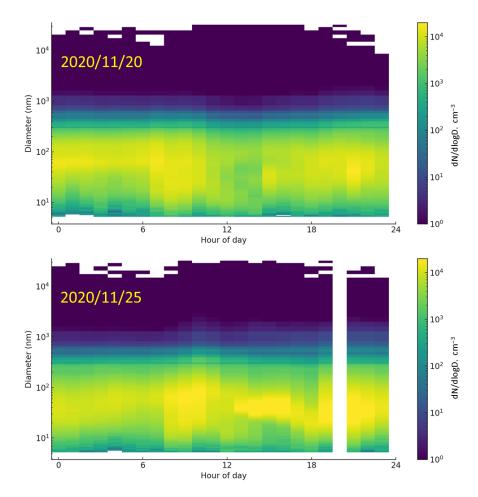


Figure S1: Size distribution of particles generated by the Atomizer. This example corresponds to a PNC of  $3.16 \times 10^4$  cm<sup>-3</sup>.



**Figure S2.** Temporal evolution of the particle number size distribution (dN/dlogD) at Xitun on 20 November (top) and 25 November (bottom), 2020. The x-axis represents local time (hours), and the y-axis shows particle diameter (nm, logarithmic scale). The color bar indicates number density (dN/dlogD; cm<sup>-3</sup>) in logarithmic scale, with zero values masked. Note that data for 20:00 on 25 November were missing.

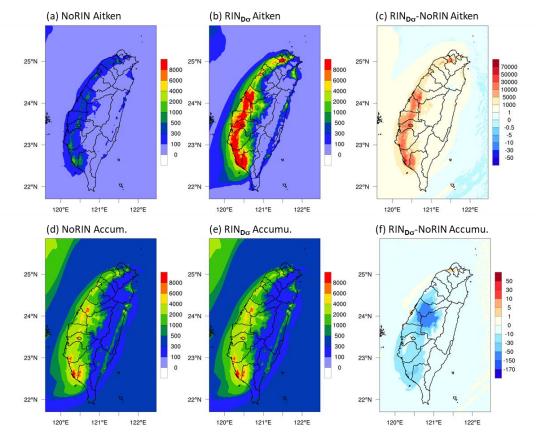


Figure S3: Same as Figure 8, but for the data of 25 Nov 2020.