SUPPLEMENT to The effect of secondary ice production parameterization on the simulation of a cold frontal rainband

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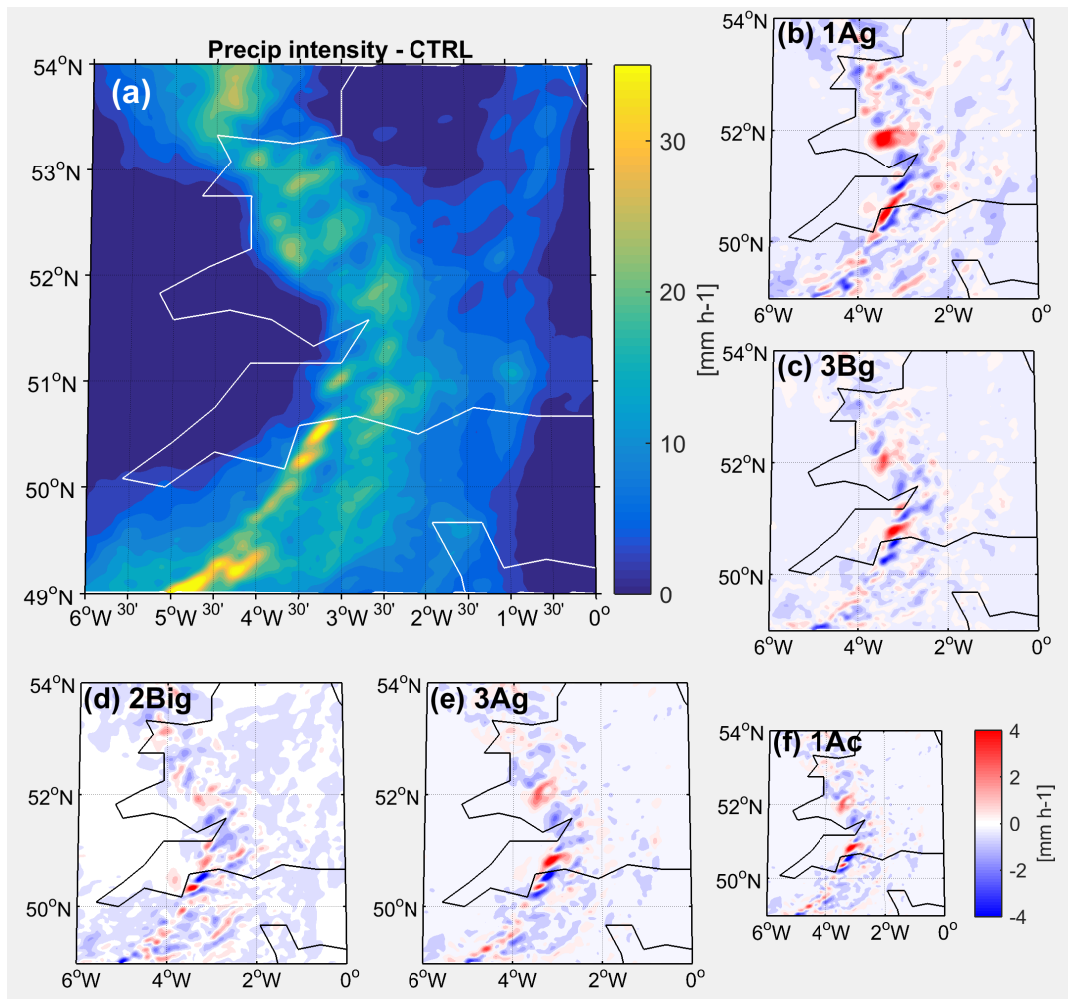
Figure S1. Panel a shows the spatial distribution of precipitation rate in the control simulation for a subdomain centered at CFARR between 1800 and 1830 UTC, as the rainband begins to pass over the UK. Panels b though f show the deviations of precipitation rate in five of the simulations with the secondary ice parameterizations in place.
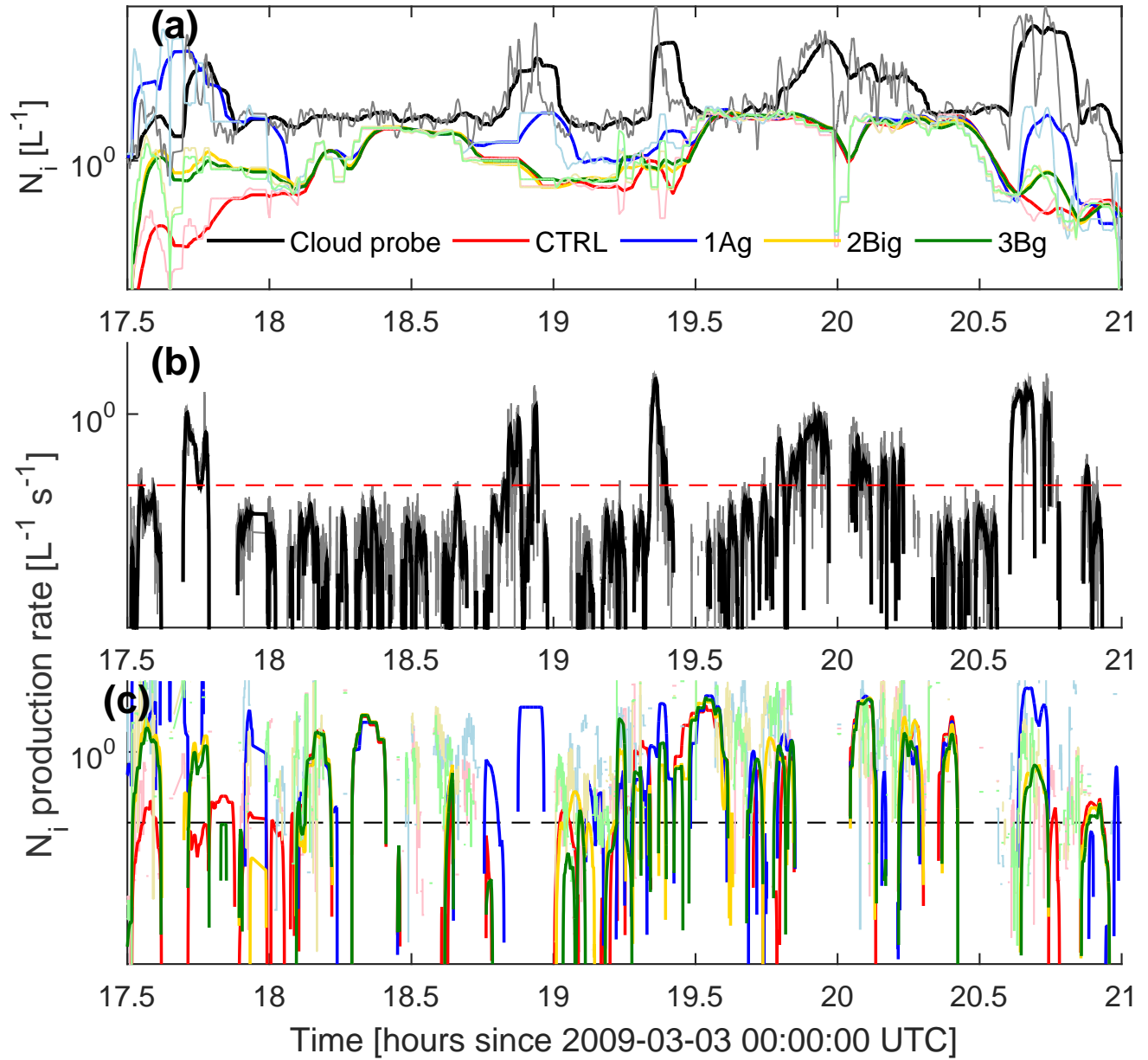
Figure S2. Additionally-smoothed ICNC time series are shown in panel a from CIP-15 observations (gray - 30-point running mean; black - 300-point running mean) and the CTRL, 1Ag, 3Bg, and 2Big simulations (pale lines - 30-point running mean; bold lines - 300-point running mean). Estimations of ice production rate are shown in panel b from observations and in panel c from simulations, with the running means calculated and visualized as in panel a. The dashed lines in panels b and c indicate the $0.1\ \mathrm{L}^{-1}\ \mathrm{s}^{-1}$ level around which many literature values fall.
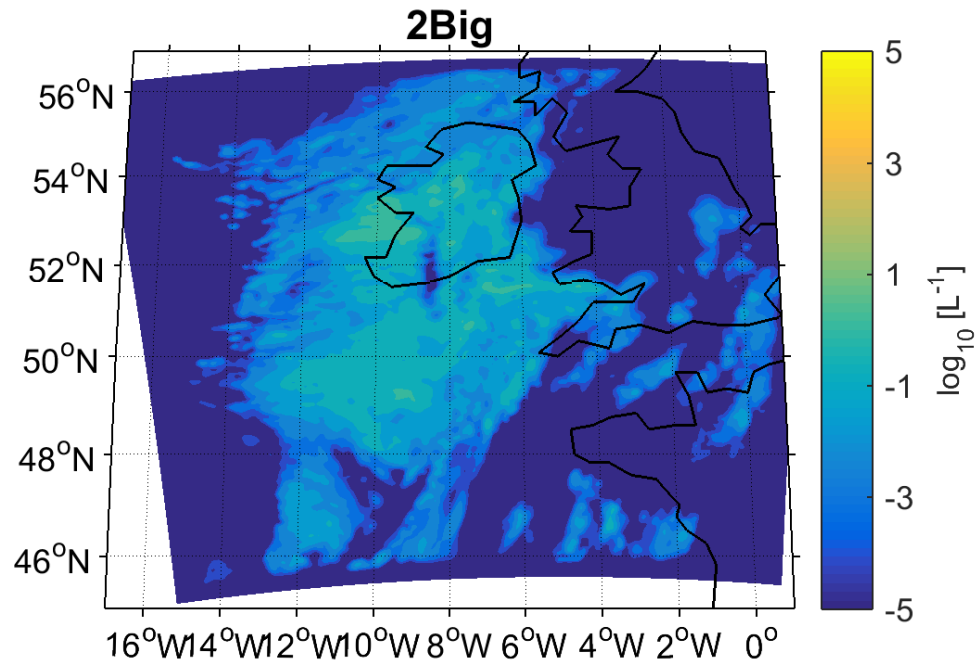
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Figure S3. Map of secondarily-produced ice from the 2Big simulation at the pressure level where $\overline{T} \approx 258$ K, as the rainband began to pass over the UK. $N_{i,sec}$ is a cumulative value between 1800 and 1900 UTC and the colorbar is logarithmic.