S1 Additional Plots

Here we present some additional plots that were left out of the publication for the sake of brevity.
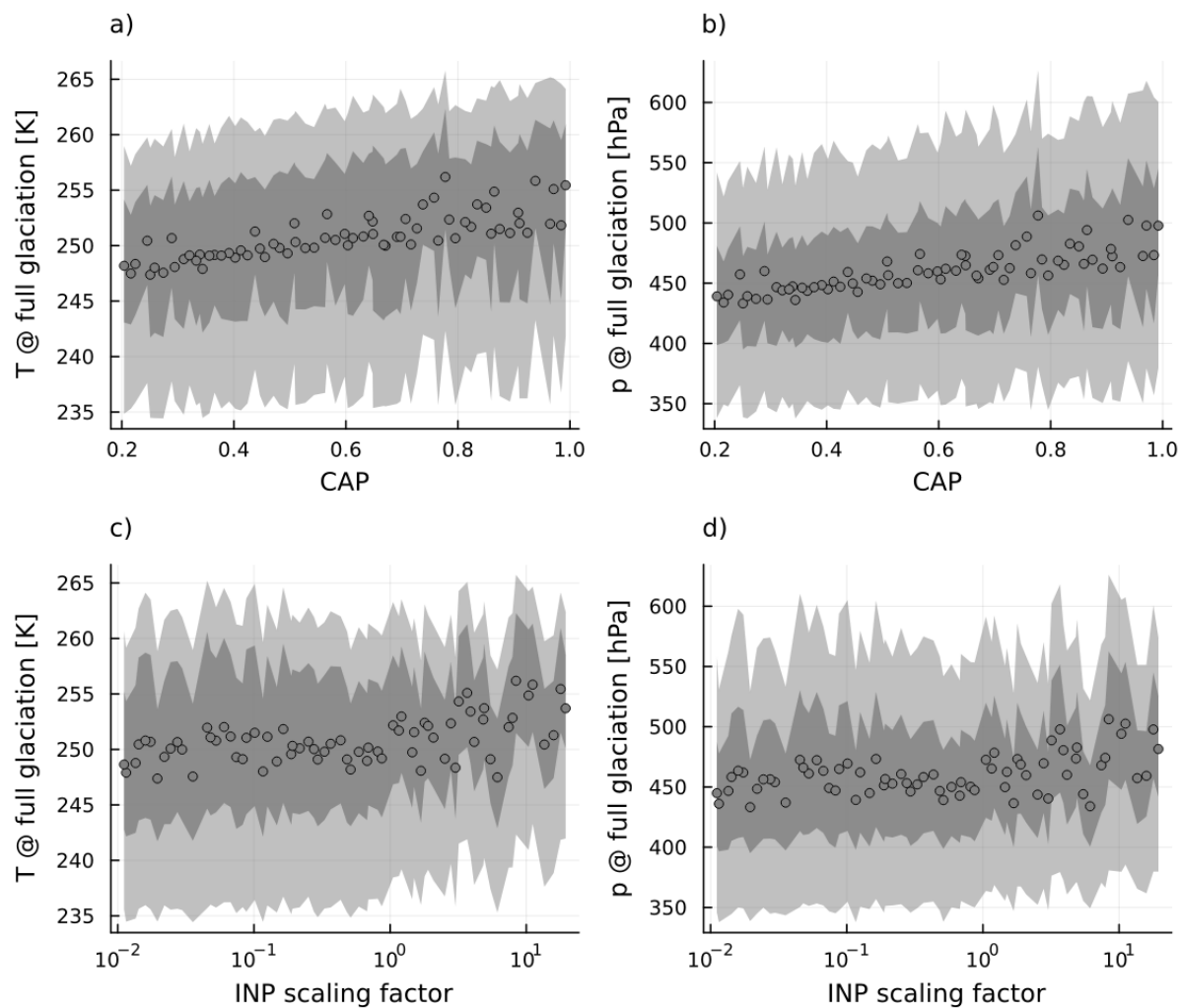
Figure SI1. Scatter plots of the mean T (a and c) and p (b and d) at the first full glaciation over CAP (a and b) and INP scaling factor (c and d). Shaded regions show 5th to 95th percentile range (light grey) and interquartile range (dark grey).
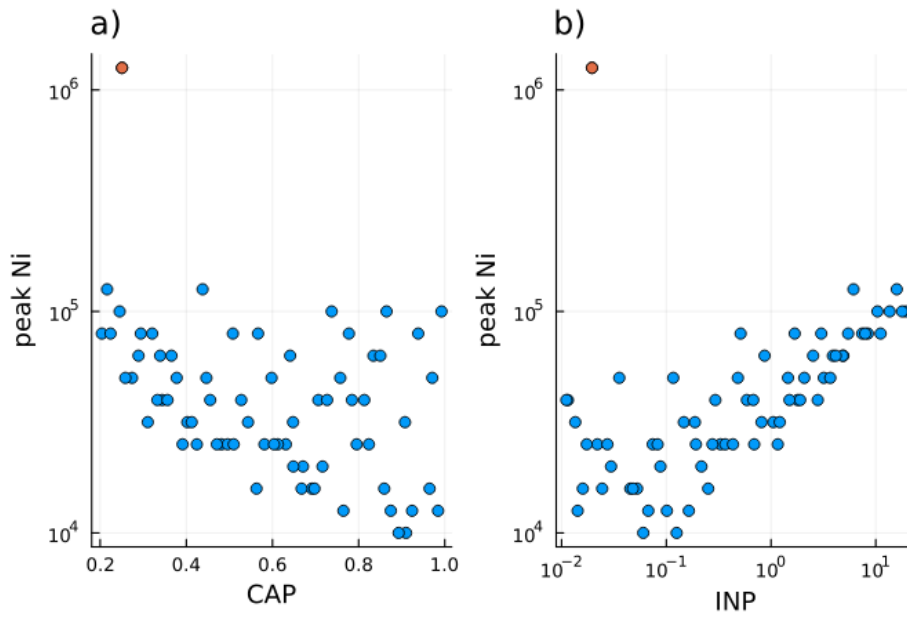
Figure SI2. Scatter plots of the location of the peak of the N_i-distribution at the end of the ascent over CAP (a) and INP (b). For the orange outlier at both low CAP and INP the second peak in the bimodal distribution is the highest.
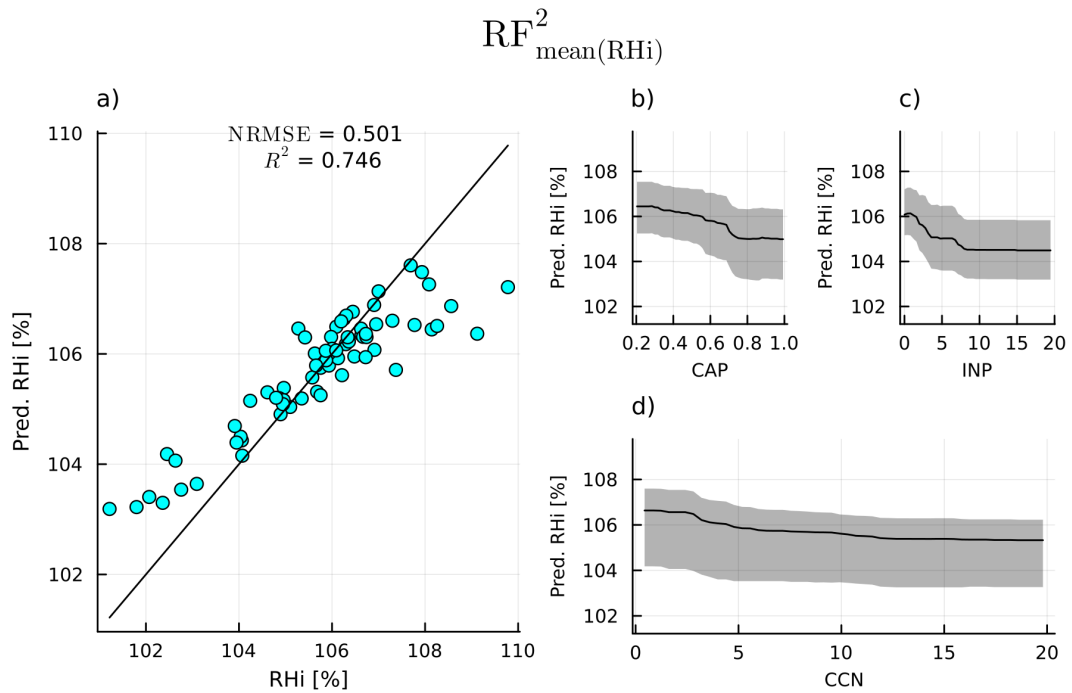
Figure SI3. a) prediction of RF2 mean(RHi) over actual mean(RHi), b), c) and d) show PDPs for CAP, INP and CCN with shaded ares indicating spread of predictions.
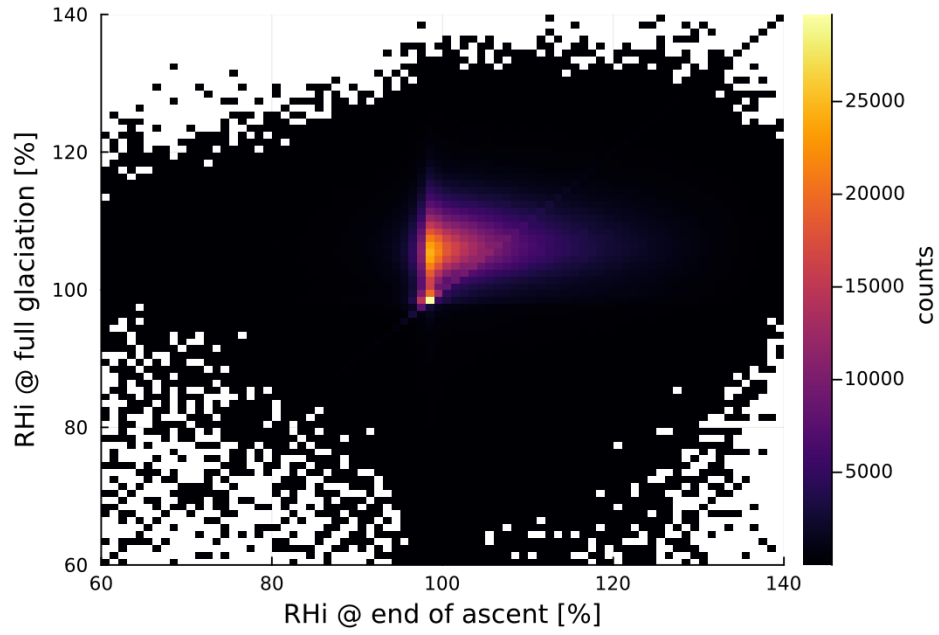
Figure SI4. 2 dimensional histogram of RH_i at the moment of full glaciation over RH_i at end the of the ascent showing no correlation.
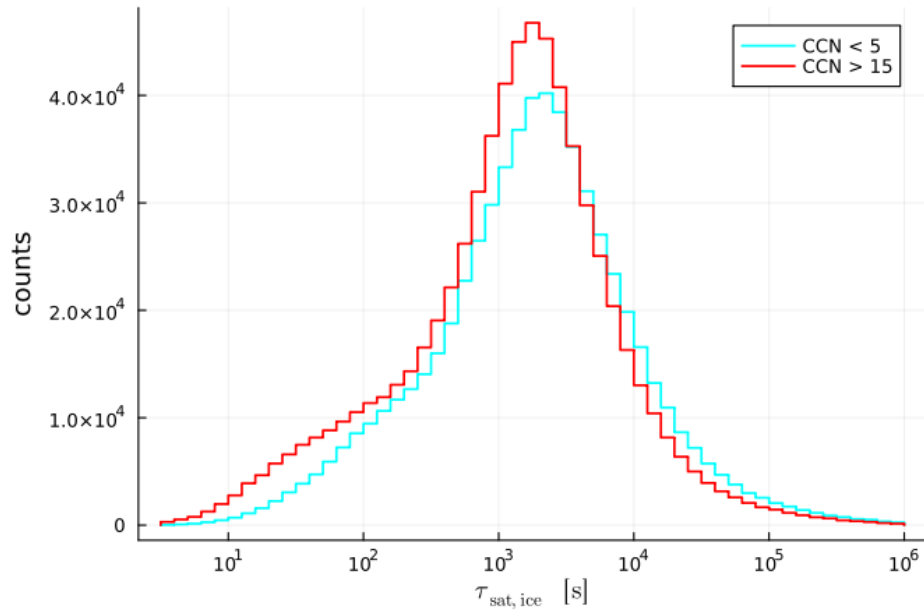
Figure SI5. Histogram of $\tau_{\mathrm{sat,ice}}$ values for two subsets of trajectories, one with a CCN scaling factor larger than 15 (red) and one smaller than 5 (cyan).
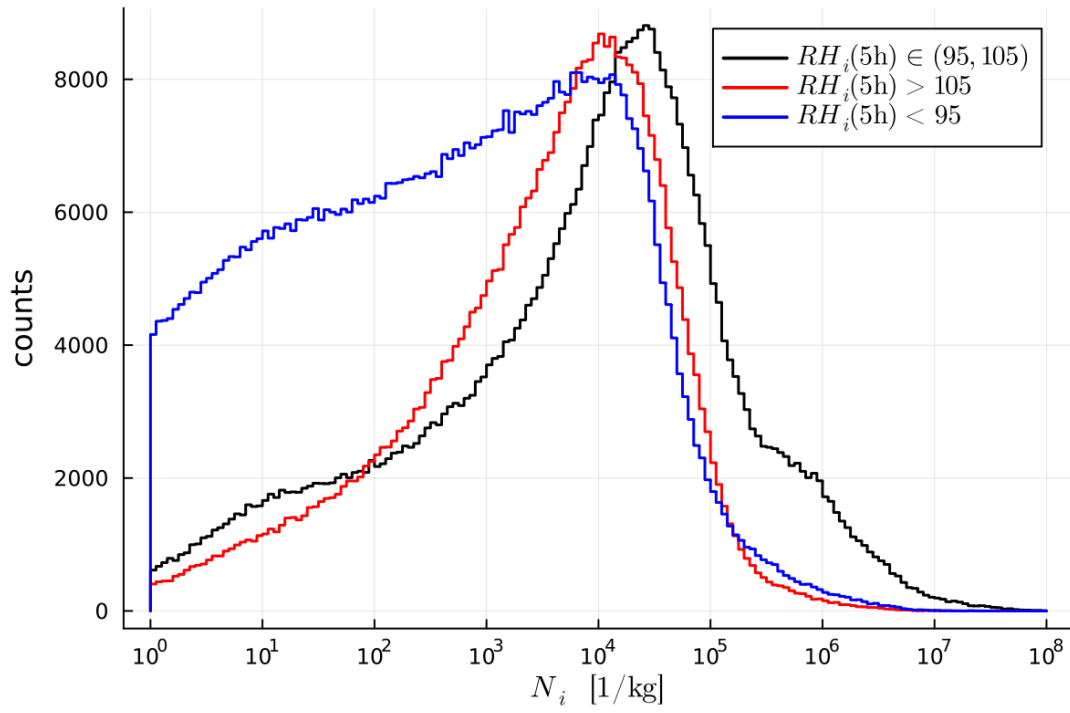
Figure SI6. Histogram of N_i values 5 hours after the end of the ascent for trajectories across all PPE members sorted according to their RH_i 5 hours after the ascent.
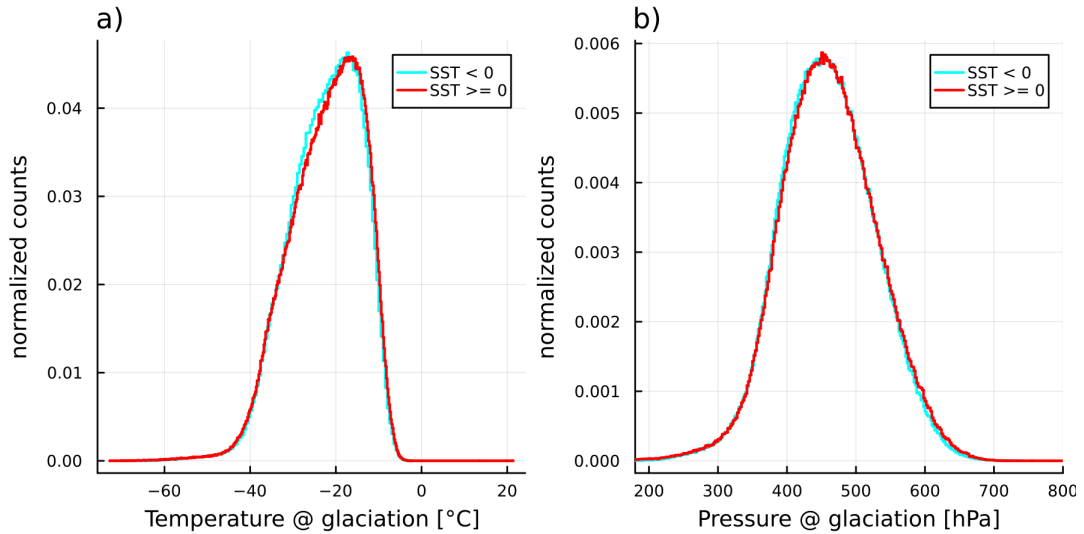
Figure SI7. Histogram of temperature (a) and pressure (b) at glaciation for all trajectories in PPE members with SST < 0 (cyan) and SST > 0 (red).