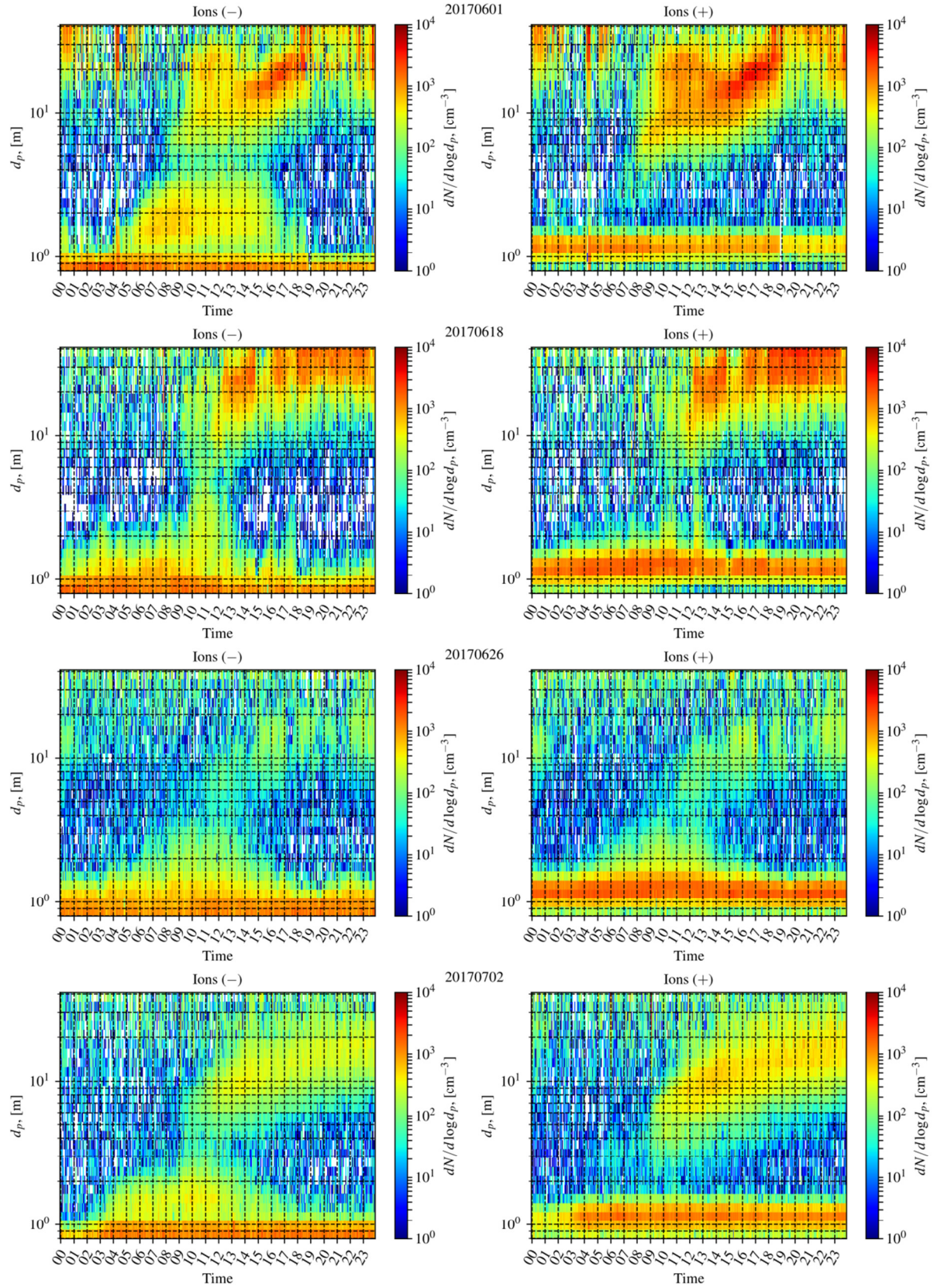
Supplementary material

SP-1. Negative and positive ions during new particle formation events observed during RV Polarstern cruise PS106. Ion number size distributions were measured using Neutral cluster and Air Ion Spectrometer (NAIS). The color scale represents ion number concentration as dN/dlogD$_p$. The presence of corona charger ions (<2 nm) can also be seen in NAIS data. This artefact was excluded from data analysis.