



*Supplement of*

## **Aerosol–cloud impacts on aerosol detrainment and rainout in shallow maritime tropical clouds**

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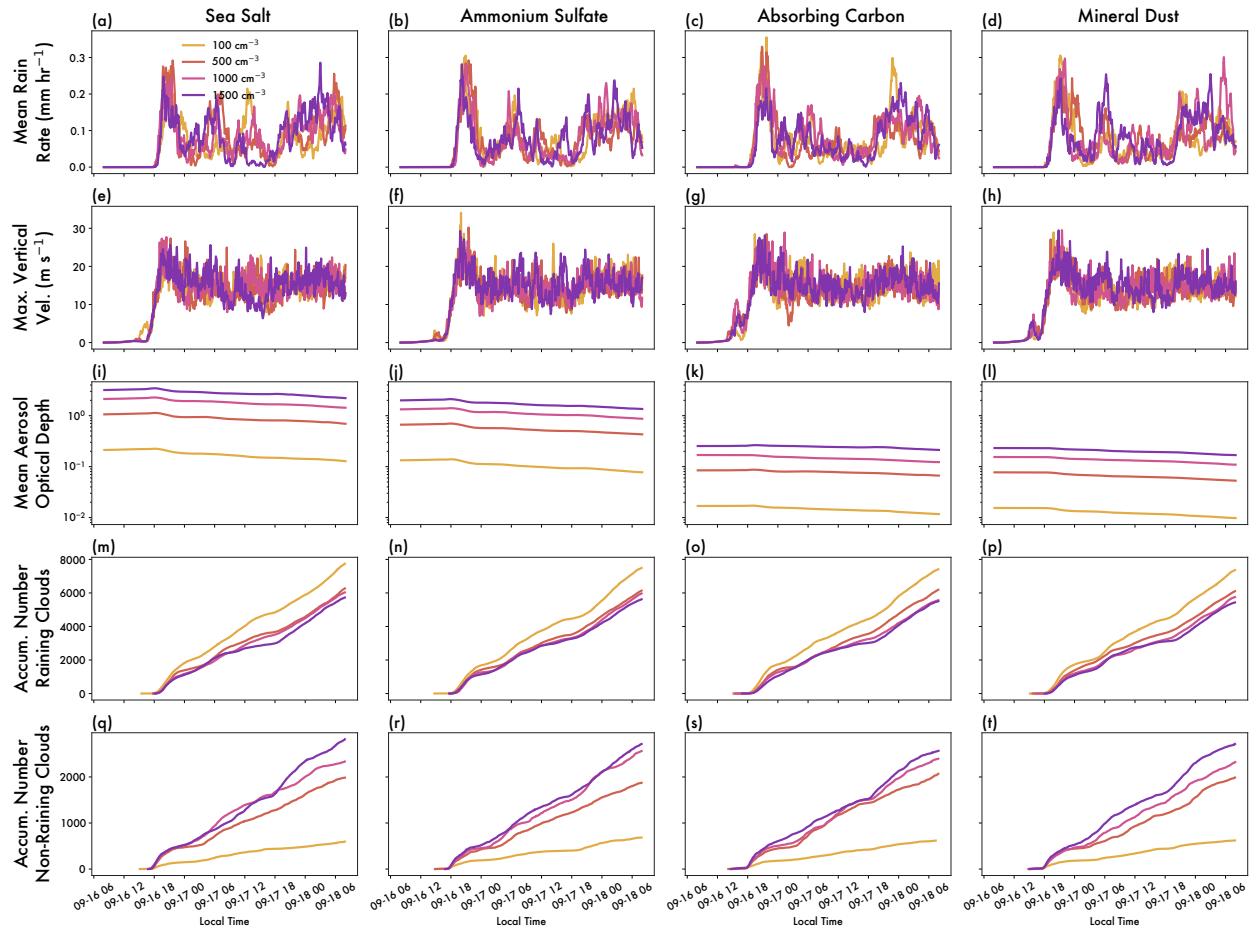


Figure S1: Time series of domain-wide properties for each run. Each column represents the indicated aerosol type, and each line represents the indicated initial aerosol loading. Properties shown are (a-d) mean rain rate ( $\text{mm hr}^{-1}$ ), (e-h) maximum vertical velocity ( $\text{m s}^{-1}$ ), (i-l) mean aerosol optical depth, (m-p) accumulated number of raining clouds, and (q-t) accumulated number of non-raining clouds.

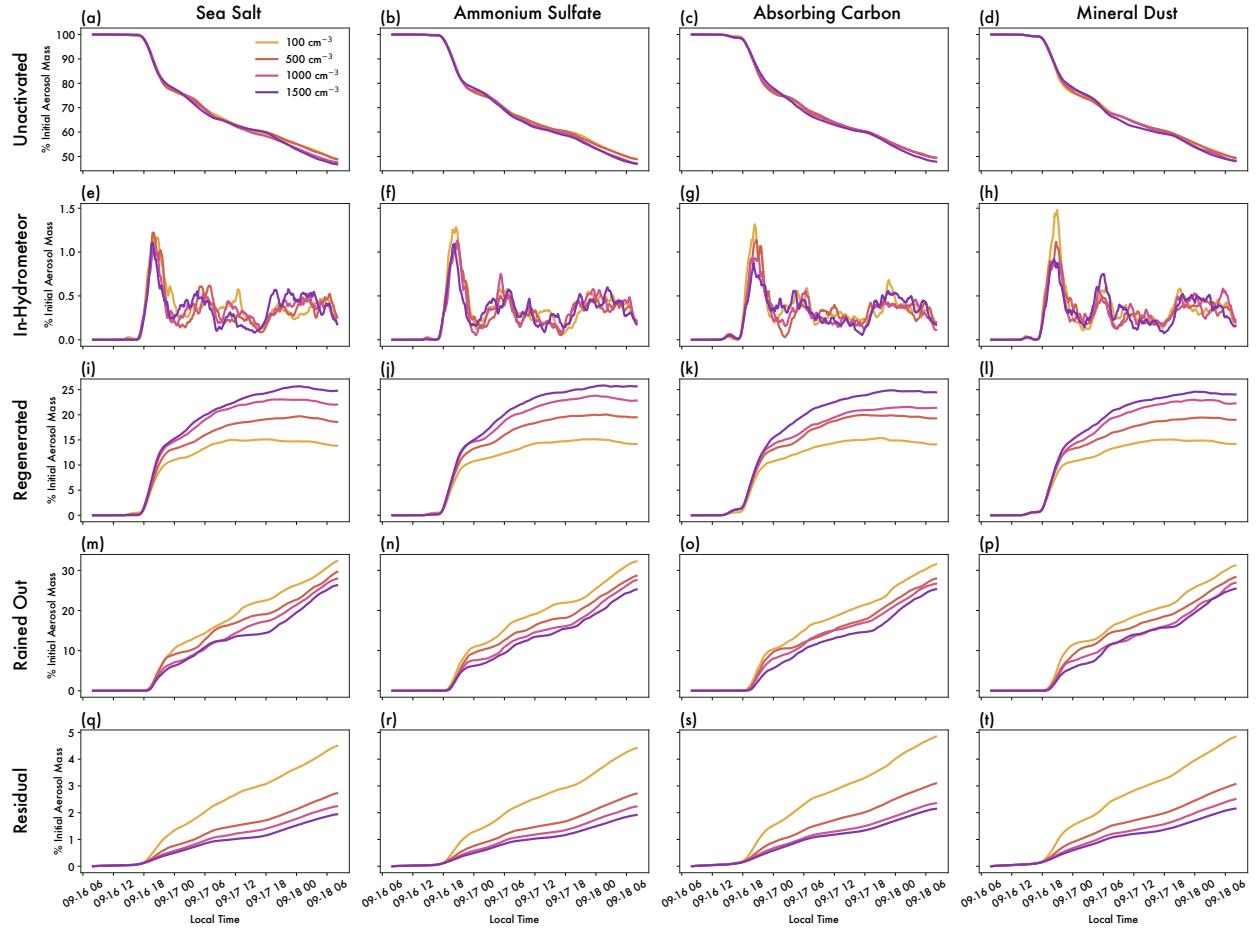


Figure S2: Time series of aerosol budget for each run. Each column represents the indicated aerosol type, and each line represents the indicated initial aerosol loading. Properties shown are (a-d) unactivated, (e-h) in-hydrometeor (i-l) regenerated, (m-p) rained-out, and (q-t) residual aerosol. Each aerosol budget term is the domain-integrated aerosol mass in a given category normalized by the total aerosol mass at initialization time.