

**Prediction of size-resolved number concentration of cloud
condensation nuclei and long-term measurements of their activation
characteristics**

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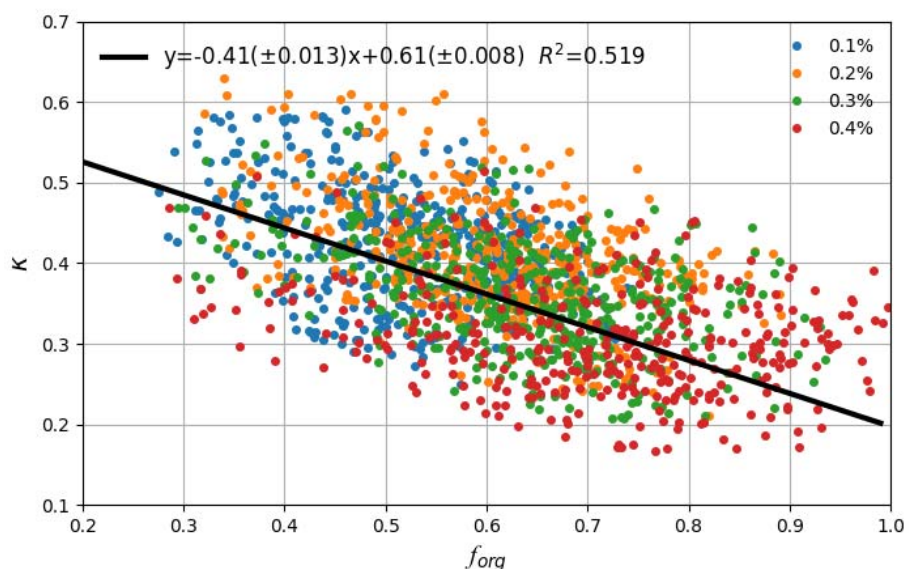


Figure S1. Correlation between the effective hygroscopicity parameter of CCN-active particles (κ_a) observed at four different supersaturations and the organic mass fraction (f_{org}) determined by size-resolved AMS measurements. The data were fitted by orthogonal distance regression with both 10 % relative error for measured κ_a and f_{org} .

As showed in the figure S1, the low correlation coefficient obtained with the size-resolved AMS data ($R^2 = 0.52$) is a result of low signal-to-noise of these data. However, the fitting line generally showed the tendency of the relation of f_{org} with κ_a . The line fit equation for all data is $y = -0.41(\pm 0.013)x + 0.61(\pm 0.008)$, with standard deviations in brackets. Extrapolation of the fit line to $x=1$ ($f_{org}=1$) yields an effective hygroscopicity parameter of $\kappa_{org} \approx 0.2 \pm 0.02$, and to $x=0$ ($f_{org}=0$) yields an effective hygroscopicity parameter of $\kappa_{inorg} \approx 0.61 \pm 0.008$.