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Supplement of

A broad supersaturation scanning (BS2) approach for rapid measurement of aerosol particle hygroscopicity and cloud condensation nuclei activity

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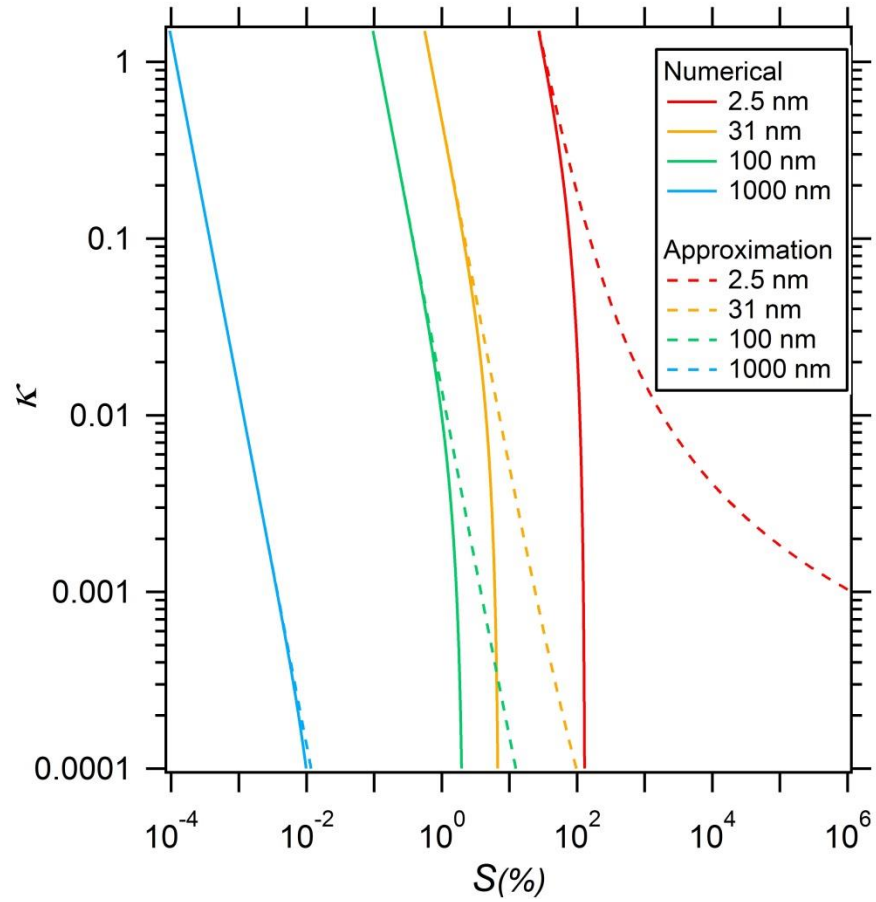


Figure S1: Comparison of κ determined by a simple approximation (Eq. 2, labeled by "Approximation" dashed lines) and a numerical iteration method (labeled by "Numerical", solid lines). The dry particle size is shown in the legend.

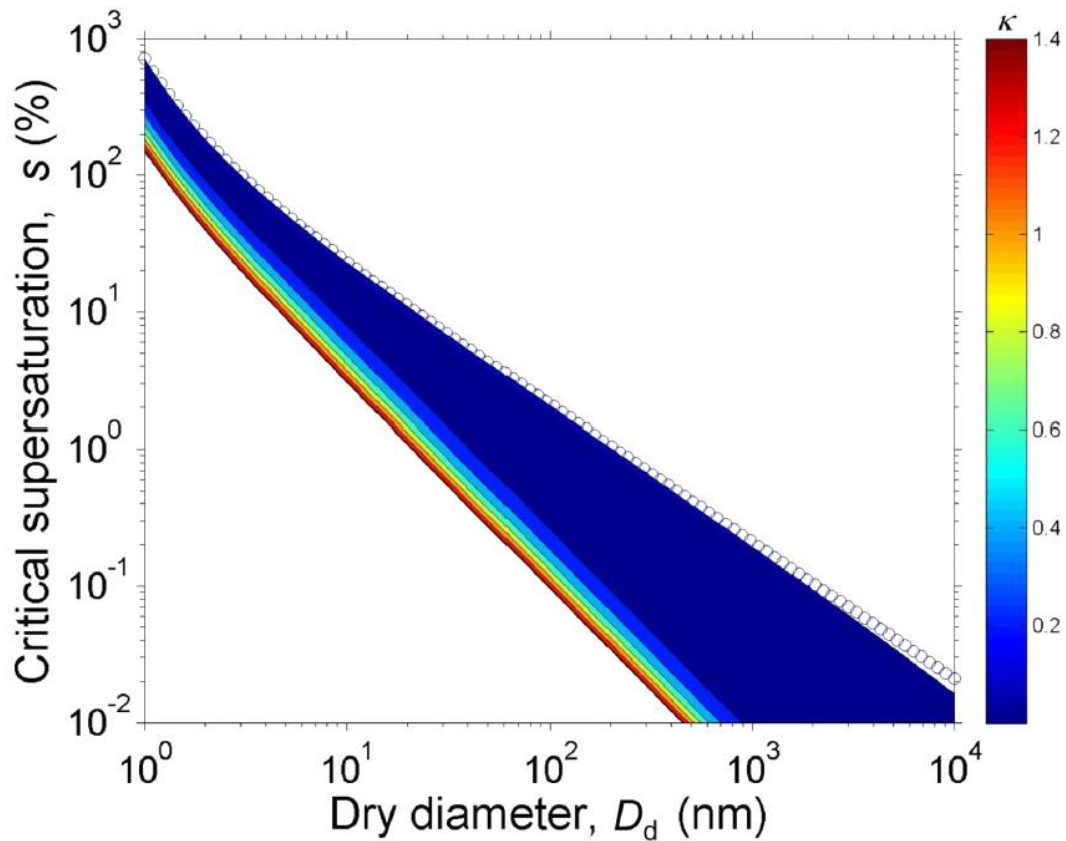


Figure S2: Critical water vapor supersaturation for the activation of aerosol particles with different dry diameter and chemical composition. The color bar indicates the κ values. The open circles are references to water droplets ($\kappa = 0$). Reprinted from Wang et al. (2015) under the Creative Commons Attribution 3.0 License.

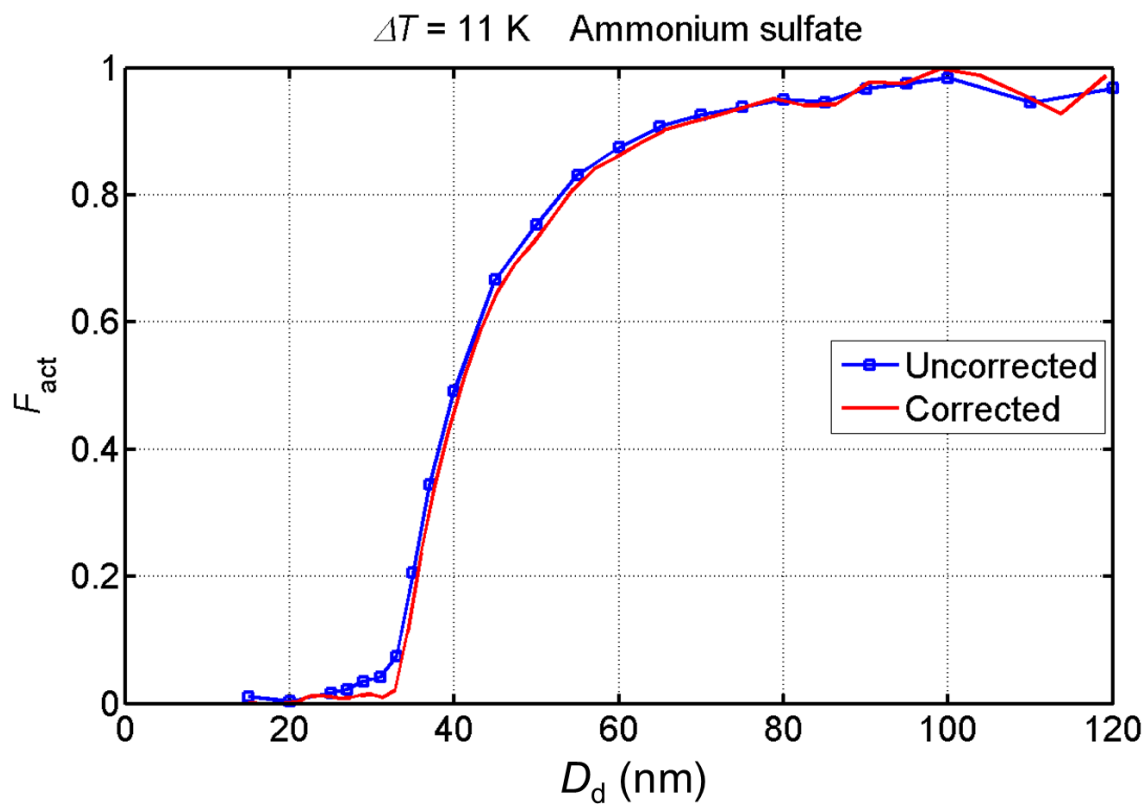


Figure S3: Size-resolved activation fraction F_{act} with (labeled as "Corrected") and without (labeled as "Uncorrected") correction for doubly charged particles: an exemplary case for laboratory generated aerosol particles.

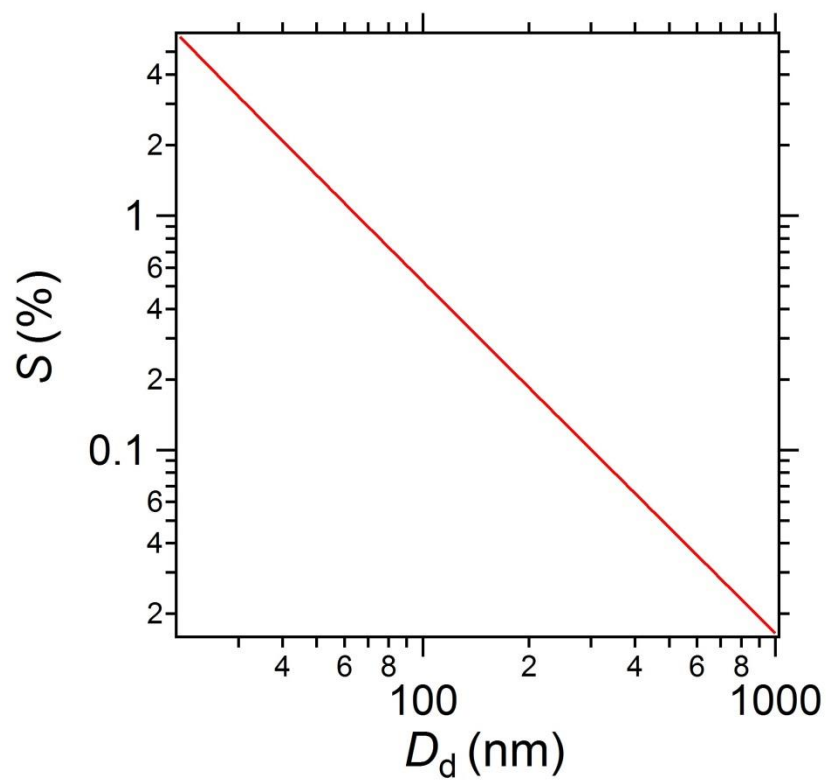


Figure S4: Critical water vapor supersaturation for the activation of aerosol particles with different dry diameter and κ of 0.05.