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*Supplement of*

## **A new parameterization scheme for the real part of the ambient urban aerosol refractive index**

**Gang Zhao et al.**

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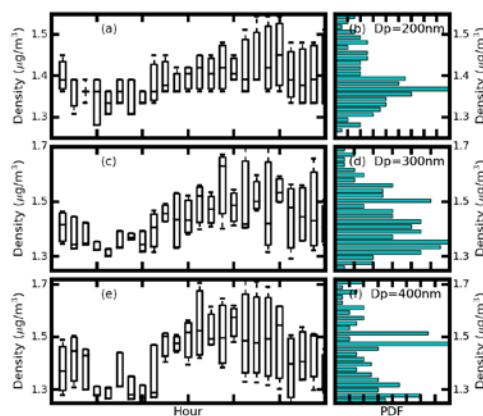
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## 1. Glossary of Acronyms

**Table S1.** Glossary of Acronyms

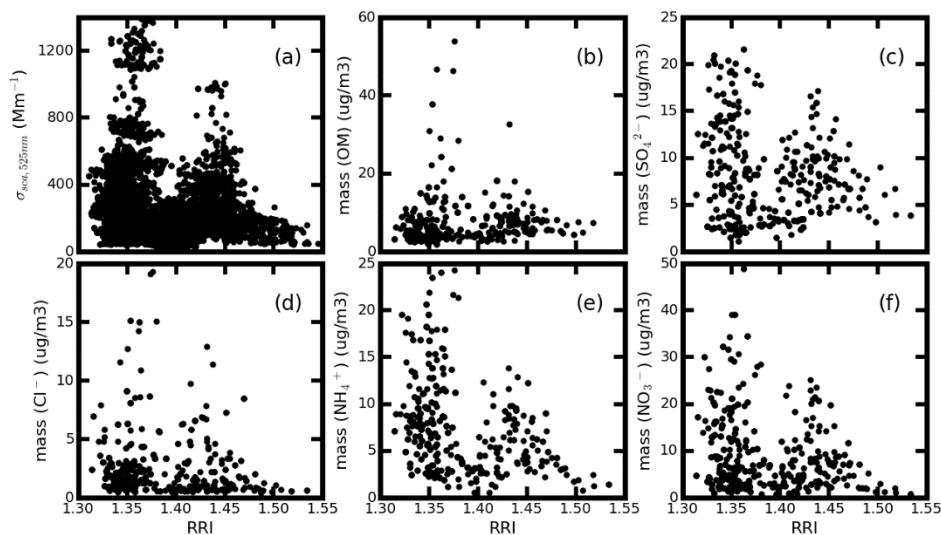
Parameter	Description
CPMA	Centrifugal particle mass analyzer
DARF	Direct aerosol radiative forcing
DMA	Differential mobility analyzer
OM	Organic matter
PNSD	Particle number size distribution
RI	Refractive index
RRI	Real part of refractive index
$\widetilde{RRI}$	Size-resolved real part of refractive index
$RRI_{eff}$	Effective RRI from the aerosol chemical information
$\rho_{eff}$	Effective density
$\widetilde{\rho}_{eff}$	Size resolved effective density
SMPS	Scanning mobility particle sizer
SP2	Single particle soot photometer
$\sigma_{sca}$	Scatter coefficient
SSA	Single scatter albedo

## 2 The daily variation and probability distribution of the $\rho_{eff}$



**Figure S1.** Daily variations of the  $\rho_{\text{eff}}$  (a), (c) (e), and the probability distribution of the measured  $\rho_{\text{eff}}$  (b), (d) (f) for the (a), (b) 200 nm, (c), (d) 300 nm, and (e), (f) 400nm aerosol.

### 3. Comparison the measured RRI Aerosol Components



**Figure S2.** Comparison the measured RRI at 300nm with the measured (a)  $\sigma_{\text{sca}}$  at 525nm, mass concentrations of (b) OM, (c)  $\text{SO}_4^{2-}$ , (d)  $\text{Cl}^-$ , (e)  $\text{NH}_4^+$  and (f)  $\text{NO}_3^-$ .

