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Supplement of

Spectral Aerosol Extinction (SpEx): a new instrument for in situ ambient aerosol extinction measurements across the UV/visible wavelength range

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SUPPLEMENTARY TABLES

Table S1. Minimum standard deviations for select wavelengths from Allan Variance test. Test conducted with filtered air at a flow rate of 90 lpm using 50 ms integration time per spectrum.

<i>Wavelength (nm)</i>	<i># of scans for minimum st. dev.</i>	<i>Time (s) to acquire # of scans</i>	<i>Minimum st. dev. (Mm⁻¹)</i>
300	1379	69	5.7
400	1076	54	3.5
500	946	47	4.2
600	946	47	5.4
700	946	47	3.9

Table S2. Summary of aerosol tests: materials used and generated size distributions. A total of 22 tests were performed generating 87 total spectra.

Material	Size Distributions			
<i>Scatterers</i>	<i>200 nm</i>	<i>600 nm</i>	<i>900 nm</i>	
Polystyrene Latex Spheres	2	1	1	
Ammonium Sulfate	1	1		
Citric Acid	1	1		
<i>Dust</i>	<i>PM₁</i>	<i>PM_{2.5}</i>		
Montmorillonite	1	2		
Blue Ridge Violet	1			
Italian Yellow Earth	1			
Luberon Natural Red	1	1		
Goethite	1			
<i>Smoke & Soot Analogs</i>	<i>40 nm</i>	<i>80 nm</i>	<i>190 nm</i>	<i>Polydisperse</i>
Fullerene Soot				1
Aquadag				1
Smoke		1	1	
Low O:C Smoke	1			
High O:C Smoke	1			

SUPPLEMENTARY FIGURE CAPTIONS

Figure S1. Intensity spectrum of the xenon lamp over the full wavelength range of the spectrometer for a filtered air sample. The measurement range is highlighted by the red box.

Figure S2. Sensitivity of MiePlot C_{ext} calculations to particle diameter for monodisperse PSL spheres (top panel) and to lognormally distributed PSL spheres with standard deviations of 1% and 2% (bottom panel).

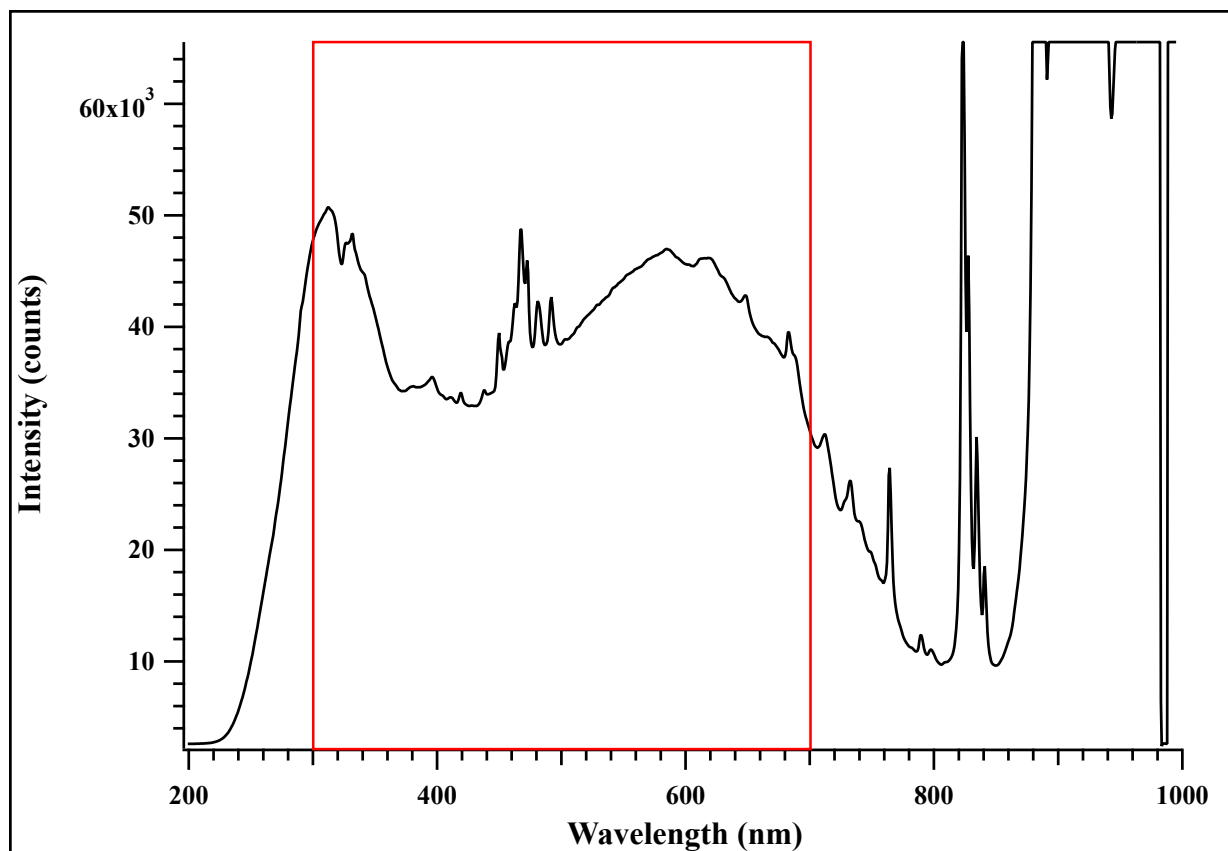


Figure S1.

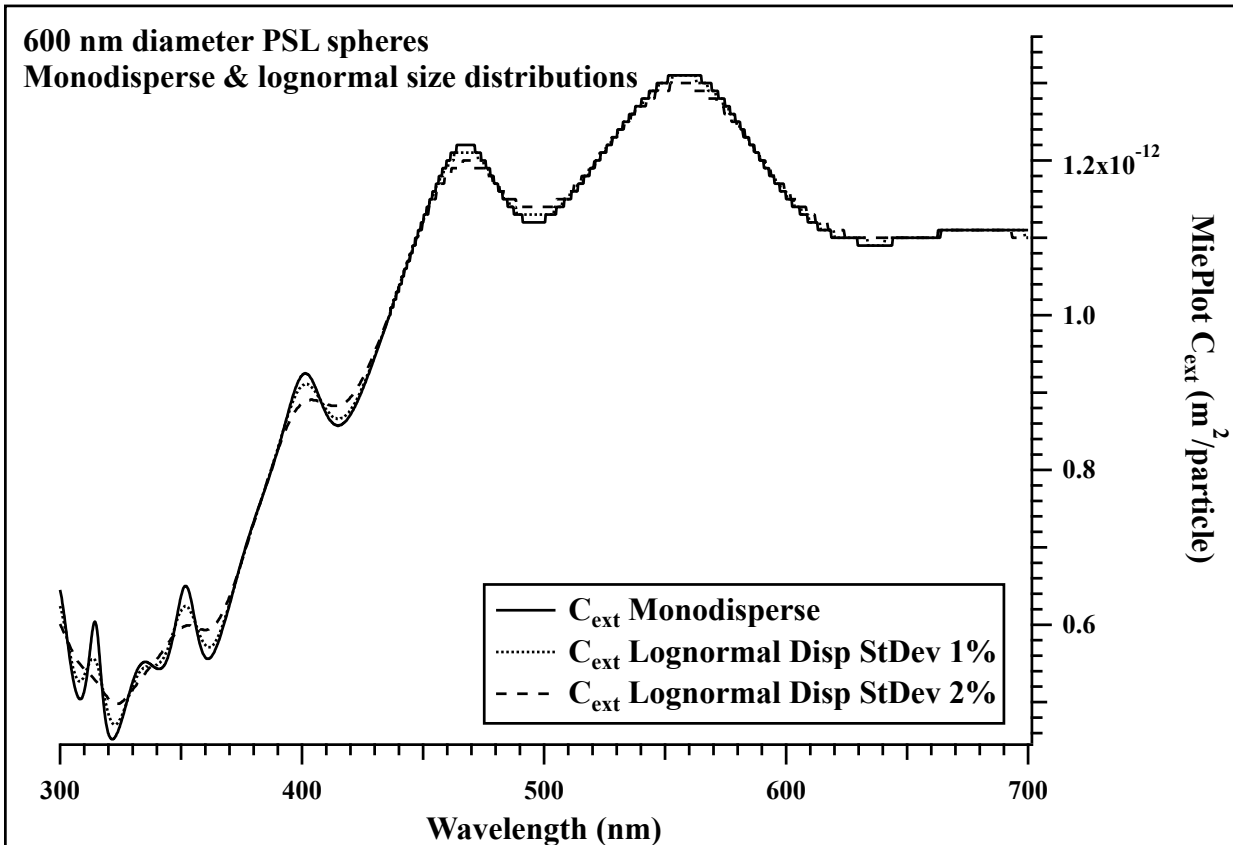
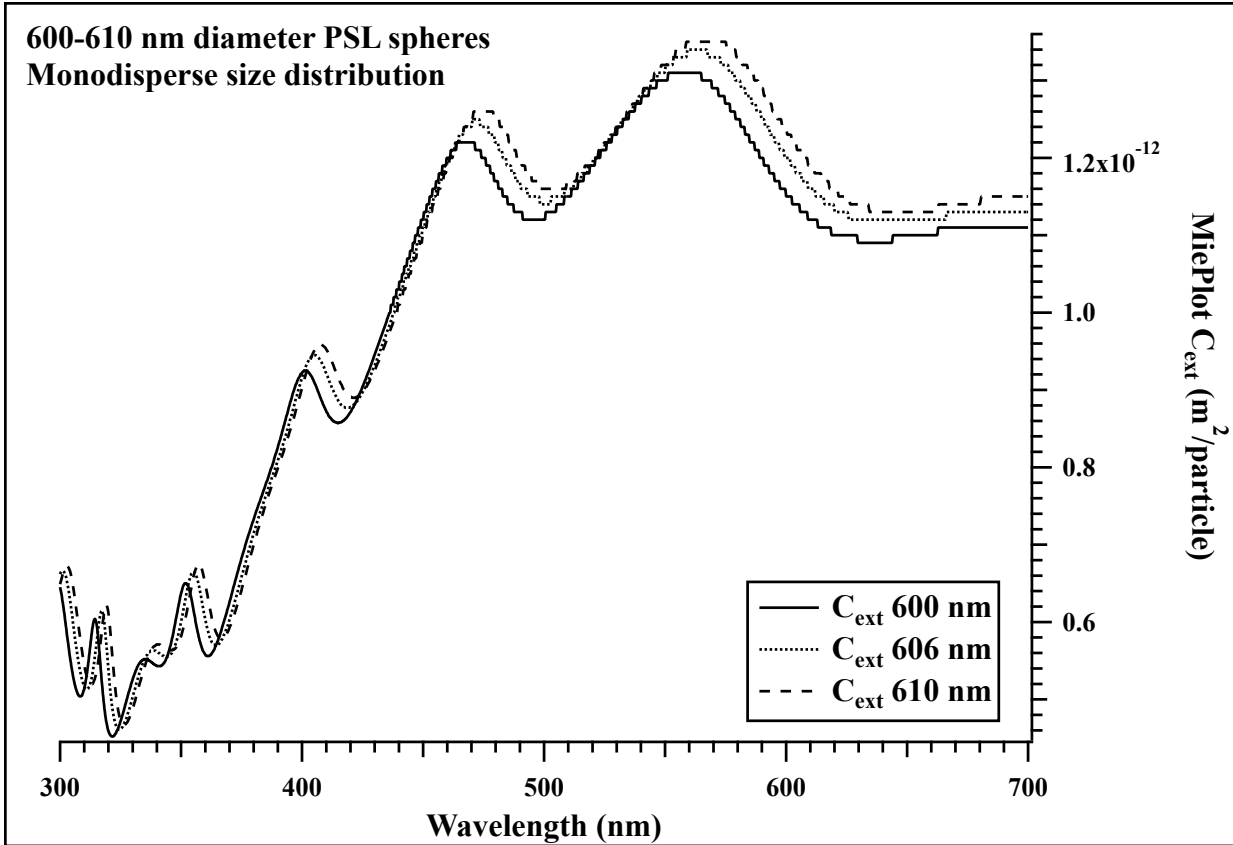


Figure S2.