

rBC removal using LII in the SP2

Objective: remove rBC-containing aerosols from mixed aerosol samples to probe aerosol processes and isolate optical properties

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Funding status: **funded**

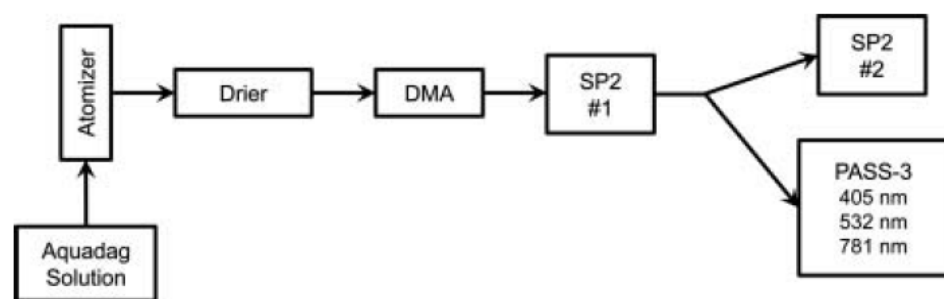
Summary of progress: Removal of rBC from externally mixed samples allows process studies to determine the effect of rBC-containing vs non-rBC-containing particles (e.g. Levin et al., 2014 for Ice Nucleating Particles) and the potential for future physical and optical studies/separation, including isolation of BrC optical property studies

Quantification of online removal of refractory black carbon using laser-induced incandescence in the single particle soot photometer

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- AVG Removal Rates:
 - 88.9 ± 18.6 % (mass)
 - 87.3 ± 21.9 % (#)
- Efficient for particles >100 nm

Incandescent d_m (nm)	Gaussian-fit		Total	
	Mass (%)	Number (%)	Mass (%)	Number fraction
100 nm	56.3 ± 5.08	49.0 ± 8.35	84.5 ± 0.81	0.55 ± 0.04
150 nm	90.0 ± 0.97	88.7 ± 1.82	91.6 ± 0.31	0.80 ± 0.04
300 nm	99.5 ± 0.07	99.4 ± 0.10	91.8 ± 0.38	1.48 ± 0.09
350 nm	98.8 ± 0.03	99.9 ± 0.03	89.9 ± 0.57	1.86 ± 0.12
500 nm	99.9 ± 0.02	99.6 ± 0.07	92.1 ± 0.53	3.30 ± 0.23
Average	88.9 ± 18.6	87.3 ± 21.9	90.5 ± 3.15	1.45 ± 1.03
Polydisperse	N/A	N/A	93.3 ± 0.20	0.76 ± 0.03

