

Opening Up and Miniaturizing Cavity Enhanced Spectroscopy

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I will discuss a method to open up cavity ring down spectroscopy to ambient conditions rather than conditions inside of an instrument. This is useful for maintaining relative humidity or for reactive molecules that would be lost in an inlet line leading into a conventional instrument. The instrument allows us to study the nearly exponential growth in light scattering at humidities above 90%, an area not accessible to other instruments. I will also discuss efforts to simplify and miniaturize a cavity ring down system for aerosol extinction. A complete instrument weighing 1 or 2 kg is feasible.