

ATS/CIRA Colloquium

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Investigating aerosol-fog interactions

Hosted by Jeff Pierce

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via Microsoft Teams

Fog reduces visibility, causing delays in transportation by land, sea and air. It is also a safety hazard that results in accidents that are sometimes fatal. Like cloud droplets, fog droplets form on cloud condensation nuclei, existing aerosol particles in the atmosphere that have the ability to activate into droplets. Also similar to clouds, we would expect that an increase in fog droplet concentration should also increase the light scattering in fog, which can be measured through visibility. This talk presents results from a fog study conducted near Halifax, Nova Scotia during the spring of 2016 and explores and connects the observed aerosol properties, fog droplet microphysics and visibility. The results are also framed to potentially provide insight on aerosol-cloud interactions. These results were used to improve the visibility parameterization in the Advanced Weather Research and Forecasting model using different boundary layer schemes and will be compared to other fog and cloud studies conducted in coastal and polar regions. These findings highlight the need for ongoing observations and modelling of fog in coastal regions.

Colloquia page: atmos.colostate.edu/colloquia