Morphology and Chemical Mixing State of Black Carbon (BC) Particles During CARES

Objective: To quantify the chemical mixing state and morphology of BC containing particles using X-ray spectromicroscopy in order to understand aerosol optical properties.

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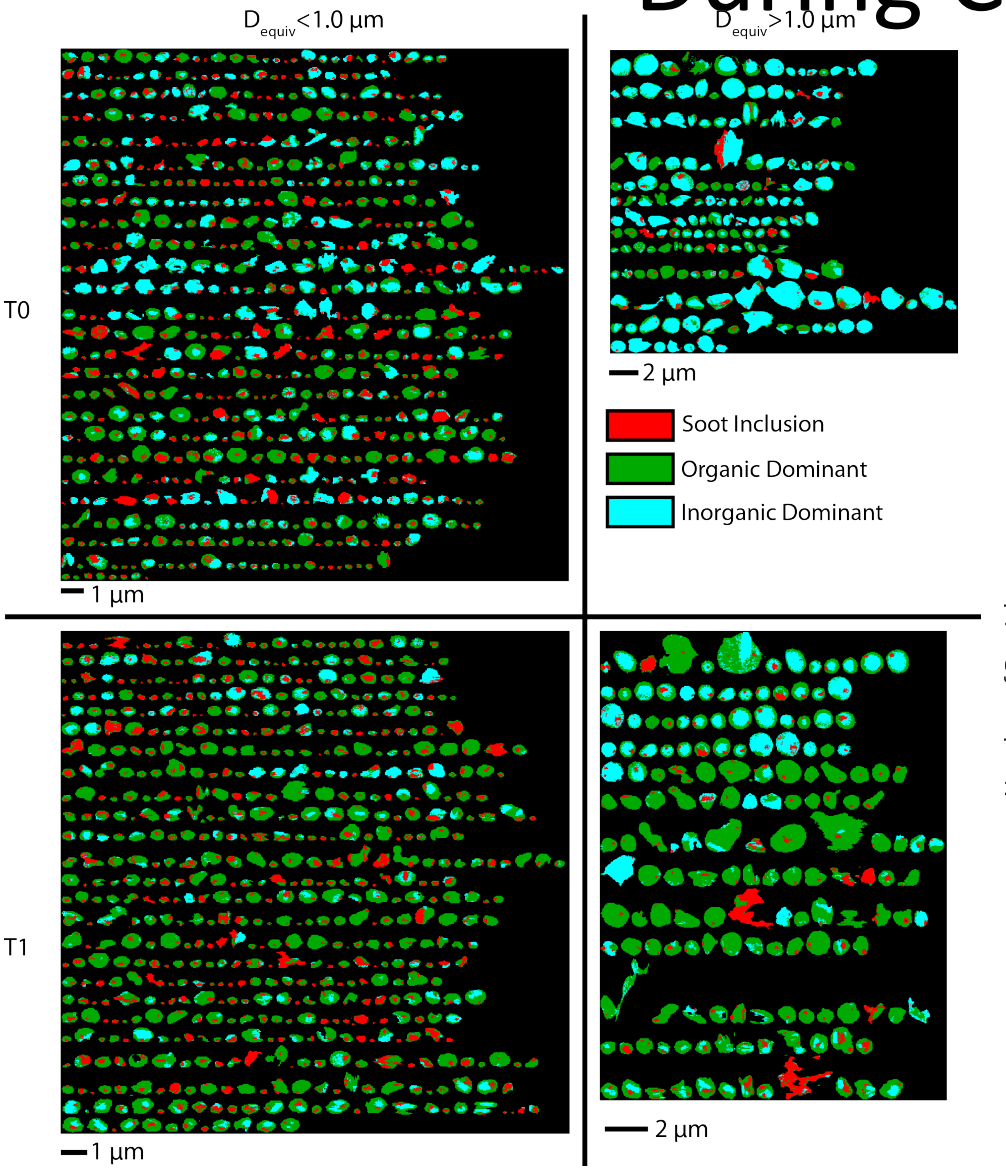
Collaborators: Mary Gilles (LBL), Alexander Laskin (PNNL)

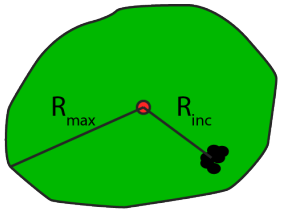
Funding status: funded

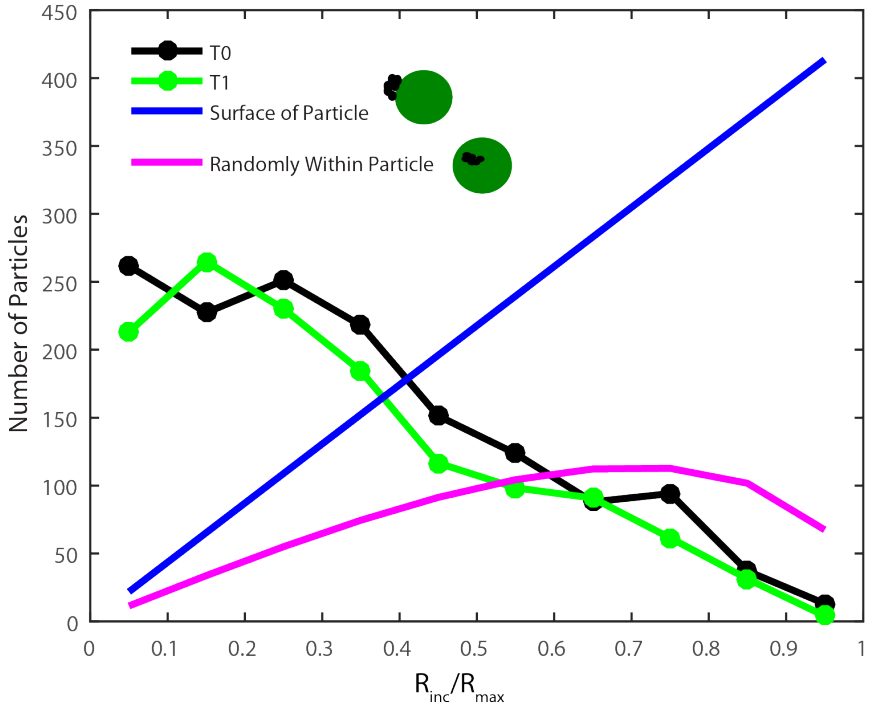
Challenges or needed resources/collaborators: The role of the substrate and offline nature of the techniques cause complications when comparing to models or *in situ* measurements. Would like to pursue the use of impaction modelling, environmental cells, or alternative collection methods.

Summary of progress: Algorithms to determine BC inclusion and coating morphlology have been completed. Parameters currently being reported include: Core and shell size, BC inclusion morphology, BC inclusion location, BC coating thickness, and BC mixing with organic and inorganic components.

BC Mixing and Inclusion Location During CARES







Moffet et al., In Preparation, JGR, 2016