

3D-PartMC for mixing state modeling

Objective: Develop WRF-PartMC-MOSAIC (3D particle-resolved model) to model mixing state impacts, together with single-particle measurements from CARES and TCAP.

Lead personnel: Matt West, Nicole Riemer

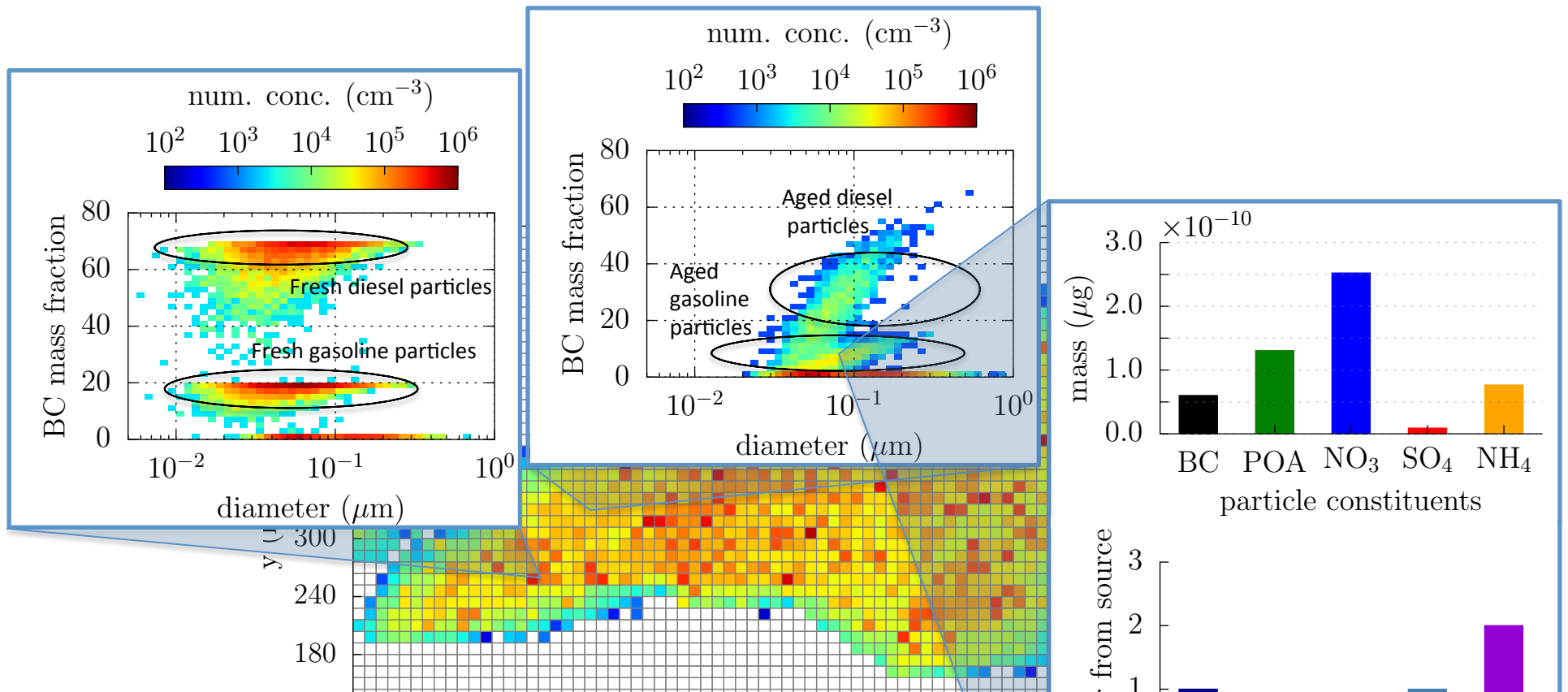
Collaborators: Larry Berg, Mary Gilles, Ryan Moffet, Jerome Fast, Rahul Zaveri, Alla Zelenyuk

Funding status: funded

Challenges or needed resources/collaborators: Emissions-inventory composition data, single-particle measurements at many sites in campaigns.

Summary of progress: Completed initial integrated 3D code, preliminary work on mixing state measurement comparisons, starting CARES modeling.

WRF-PartMC-MOSAIC. Particle-resolved physics and chemistry coupled with 3D dynamics



Yearly emission rate,
area sources: county grid,
point source: exact coordinates

Source-resolved, hourly
mass emission rate,
area sources: 4 km grid,
point source: exact coordinates

Source class tracked
size-resolved aerosol
emissions per grid cell