Deliverable D5A: Single-particle morphology and mixing state in different environments

Objectives:

1. Parameterize BC mixing state, coating, morphology during **CARES** and ClearfLo using **SP2** and electron microscopy
2. Characterize morphology and mixing state of aged BC transported to the **Pico Mountain Observatory**, Azores, North Atlantic, using electron microscopy

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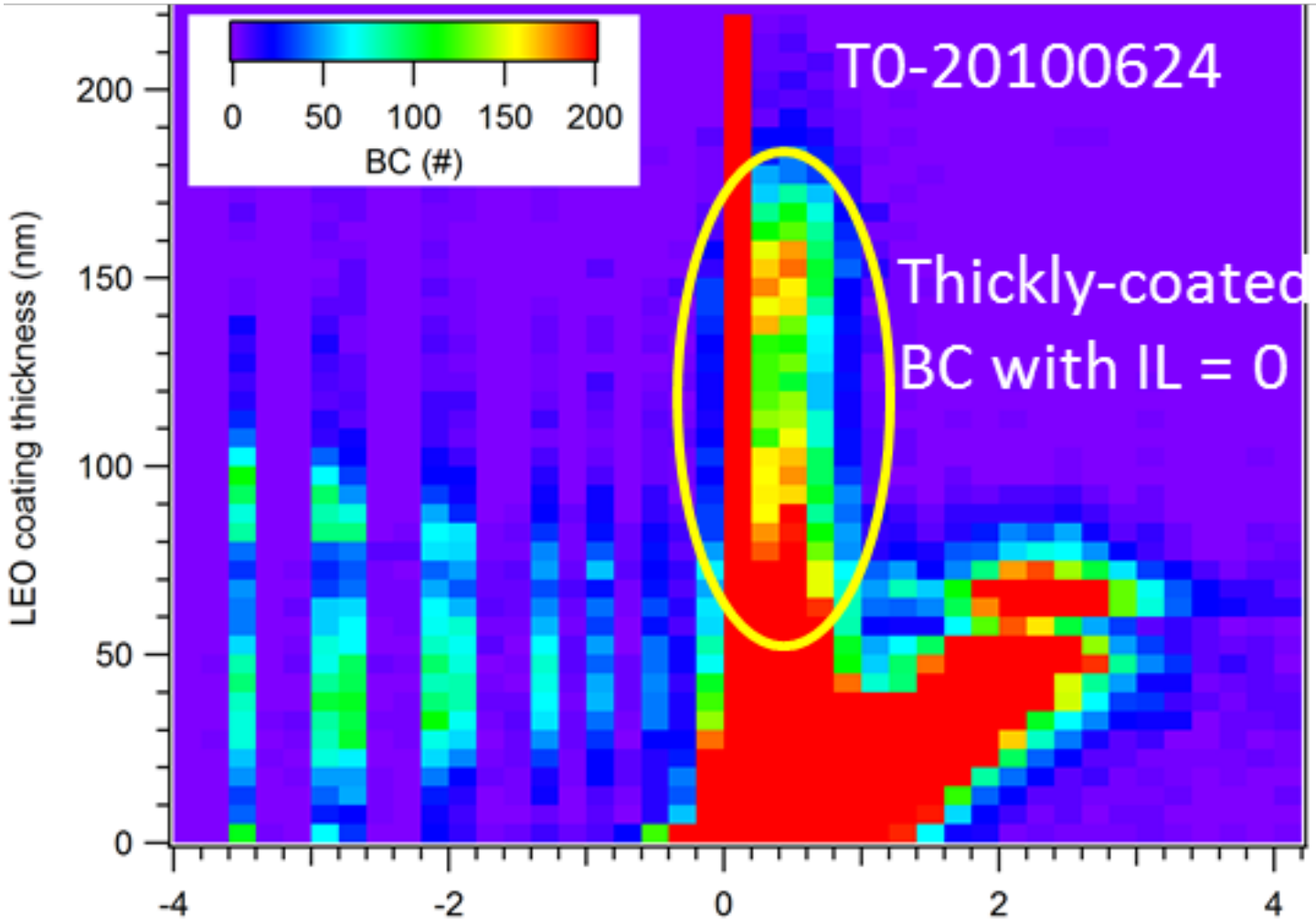
Funding status: **1** and **2** funded, but **2** ending soon

Challenges or needed resources/collaborators:

- RS moved from RTI to CMU. Delayed progress during grant transfer (now resolved)
- Need to individuate other periods with loaded filters to investigate more the link between SP2 negative lagtime and soot morphology

Summary of progress:

- LEO-based BC coating thicknesses suggest some SP2 coating indicators imperfect
- Analyzed ~1700 single particles with SEM for morphological differences between two periods with different lagtime ratios (positive to negative… from Art)

Some results – CARES

SP2 incandescent lag issues