

## ***Interactive comment on “Structural changes of CAST soot during a thermal-optical measurement protocol” by Theresa Haller et al.***

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Before posting my limited remarks, I would like to congratulate the authors on a beautifully executed and documented study. The clarity of presentation, and the completeness of the analysis using multiple technique make this paper one that I plan to use to show students as a shining example of how to approach a problem, plan and execute the experiment, then document the results. In addition, the description of the different measurement techniques and the accompanying figures make these methodology sections ideal for educating the technically competent reader who does not have knowledge about these techniques.

One very minor suggestion concerning Fig. 4. Neither in the text or figure caption are

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the two types of Brown carbon described that are shown by the brown lines. It took me a couple of minutes before I understood the difference.

A more substantive comment concerns the conclusions. I was expecting a summary discussion that would tie the results to the introductory problem statement, i.e. the difficulty in determining brown and black carbon concentrations when there are mixtures. Given the different measurement technique that were used to show how the brown carbon evolved as it was heated, if there potential for combining two or more of these technique to better improve the accuracy and decrease the uncertainty?

Or is this group already working on that concept for a followup paper?

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