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Comment on acp-2021-336

James Allan

Community comment on "Method to Quantify the Black Carbon Aerosol Light Absorption Enhancement with Mixing State Index" by Gang Zhao et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-336-CC1>, 2021

This paper uses a combination of an SP2 with a sizing instrument to deliver information concerning BC mixing state, which is a topic of much interest to us. We would like to take this opportunity to make the authors aware of a previous work we have published on the subject (Yu et al., 2020), which also used monodisperse SP2 measurements to generate the Rierner-style mixing state metrics, albeit classified using a CPMA rather than a DMA. Can the authors comment on how comparable the metrics produced by the two techniques are?

Yu, C., Liu, D., Broda, K., Joshi, R., Olfert, J., Sun, Y., Fu, P., Coe, H., and Allan, J. D.: Characterising mass-resolved mixing state of black carbon in Beijing using a morphology-independent measurement method, Atmos. Chem. Phys., 20, 3645–3661, <https://doi.org/10.5194/acp-20-3645-2020>, 2020.