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## Extinction efficiencies of coated absorbing aerosols measured by cavity ring down aerosol spectrometry

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**Abstract.** In this study, we measure the extinction efficiency at 532 nm of absorbing aerosol particles coated with a non-absorbing solid and liquid organic shell with coating thickness varying between 5 and 100 nm using cavity ring down aerosol spectrometry. For this purpose, we use nigrosin, an organic black dye, as a model absorbing core and two non-absorbing organic substances as shells, glutaric acid (GA) and Di-Ethyl-Hexyl-Sebacate (DEHS). The measured behavior of the coated particles is consistent with Mie calculations of core-shell particles. Errors between measured and calculated values for nigrosin coated with GA and DEHS are between 0.5% and 10.5% and between 0.5% and 9%, respectively. However, it is evident that the calculations are in better agreement with the measured results for thinner coatings. Possible reasons for these discrepancies are discussed.

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