Atmospheric Measurement Techniques Discussions

Atmos. Meas. Tech. Discuss., referee comment RC1
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Comment on amt-2020-412

Anonymous Referee #1

Referee comment on "New correction method for the scattering coefficient measurements of a three-wavelength nephelometer" by Jie Qiu et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2020-412-RC1, 2021

Using in situ measurements of aerosol size distribution, black carbon etc in a few stations in China, the authors developed a nice method to correct scattering coefficient measurement. This is a very interesting research and the results sound solid, so I suggest to accept this submission after a few minor revisions.

1. L54-55, I'm a little confused why the absorption properties of particles can later the wavelength dependence of scattering

2. L81-82, I'm not confortable for this statement, CF is physically related to refractive index and particle size, SAE cannot resolve all these influences, forturnately, HBF, the simultaneous measurement with SAE, can, to some extent, provide extra information on particle size. That's it, the sentence looks like HBF is physically related to CF, but it is not, according to my understanding

3. The authors used a RF method, maybe it is necessary to talk about more why RF is much better than the ordinary regression method.