

Interactive comment on “Optical properties in the UV and visible spectral region of organic acids relevant to tropospheric aerosols” by C. E. Lund Myhre and C. J. Nielsen

Anonymous Referee #1

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I found the reported research valuable since it shows that tropospheric aerosols based on organic acids will not lead to any significant absorption of solar radiation in the climatologically important region between 200 and 1100 nm. Thus the predominant effect of these organics will be the cooling.

At the same time there are a few points that need to be clarified:

1. The measurements were done with the resolution of 1 nm. This represents quite a coarse step especially in the near IR region (around 20 cm⁻¹). Are there any IR absorption features in any of the investigated acids at the spectral scale smaller than 20 cm⁻¹?

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2. The method using several cells with different lengths is quite common. It should not be introduced as something special for the reported research.

3. Eq. 4 approximate refractive index (real part) as a linear function of the weight fraction. Fig. 7 shows some points (especially around 21%) quite off the linear dependence. The accuracy of the linear fit and other empirical relations should be quantified. Is the weight fraction the best variable? Would not be the mole fraction or a volume fraction more accurate for linear fitting?

4. The water absorption feature around 980 nm has its origin in three separate water vapor vibrational-rotational bands. It there really just one peak in liquid water absorption or is this a result of insufficient spectral resolution (of about 20 cm)?

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