Atmospheric Measurement Techniques Discussions

Atmos. Meas. Tech. Discuss., referee comment RC1
https://doi.org/10.5194/amt-2021-72-RC1, 2021

Comment on amt-2021-72

Anonymous Referee #1

Referee comment on "A method for liquid spectrophotometric measurement of total and water-soluble iron and copper in ambient aerosols" by Yuhan Yang et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-72-RC1, 2021

General comments

The authors described the relatively low-cost analytical method for measurement of water-soluble and total Fe and Cu in aerosols and analyzed the aerosol samples over Atlanta. Such a high-frequency monitoring measurement is extremely useful for validation of the models and environmental assessment. I can recommend this paper for publication in Atmospheric Measurement Techniques and have minor comments to improve the paper.

Specific comments

Title

The reader might expect measurement of various chemical forms of iron and copper mentioned in introduction. Please consider rephrasing it by total and water-soluble, etc.

p.7, l.191: Please discuss feasibility of in-situ measurements of ambient aerosols to investigate the speciation of WS Fe and WS Cu.

p.10, l.289: Please specify the chemical composition for the mass fraction of 5.63%

Conclusion

Please discuss feasibility of high-frequency monitoring of Fe and Cu in size-resolved aerosol and rainwater samples.

Data availability

How did you estimate the solubilities when the total and WS concentrations were blank?

Please comment on the data such as 2017/3/20, which showed higher concentration through ultrafiltration than a 0.45 μm filter.

Please comment on the data such as 2017/4/10 and 2017/12/18, which showed higher solubilities than 100%.

p.16, l.510: Please correct the unit.

Supplement

p.2, l.32: Please correct “colloidal??”.

p.2, l.53: Please correct “Figure S8”.