

## ***Interactive comment on “A proxy for atmospheric daytime gaseous sulfuric acid concentration in urban Beijing” by Yiqun Lu et al.***

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It is interesting to see how the sulphuric acid concentration can be approximated in highly polluted environment, as we did not have such data when we were making our paper Mikkonen et al. (2011). Even more interesting is, that your recommended proxy N2 is quite close to our second recommendation, simple proxy L3, having SO2 power to 0.5 when you have power of 0.4. In addition, I was surprised that the H2SO4 concentration was not higher than shown in Table 1. We had similar average concentrations in San Pietro Capofiume and considerably higher in Atlanta, even though they are less polluted environments. Could you add a comment on that?

I just want to ask about Figure 4: Why only one day, and not averages over whole period

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such that uncertainty would also be indicated, is shown in the figure? In addition, why comparison only to Boreal forest-proxy from Petäjä et al, why not to Mikkonen et al., who had data from multiple sites?

A minor comment on the use of p-value as a screening factor for correlation (in line 266): it is not recommended. See e.g. Greenland et al. (2016): DOI 10.1007/s10654-016-0149-3

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-1132>, 2018.

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