

## ***Interactive comment on “Comparison of analytical methods for HULIS measurements in atmospheric particles” by C. Baduel et al.***

**Anonymous Referee #1**

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General comments: This manuscript presents a quantitative comparison of two methods used to isolate HULIS from atmospheric aerosol: (i) a single-step separation technique using the weak anion exchanger resin DEAE cellulose, and (ii) a two step protocol with separations performed on a hydrophobic C18 medium followed by a strong anion exchanger (SAX). The two methods were compared to determine their analytical performance, including extraction yield from two standard humic materials, and selectivity for humic materials as compared with other organic and inorganic species common in aerosol. UV spectra of the un-separated materials and the separated materials were also compared. The two methods were applied to a set of atmospheric samples to examine the different yields and chemistries. The manuscript is generally well-written, and the experimental protocols are sound. I hope it marks an important first step in standardization of HULIS isolation protocol. However, their conclusion is

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too far reaching (recommending the DEAE extraction), because only two methods were tested. I agree that, according to their results, the DEAE method appears to be superior to the C18-SAX method. However, I would have been glad to see other widely used isolation methods compared, including a method which follows closely the IHSS protocol for humic substances which involves isolation on XAD-8 resin followed by desalting (Dinar et al., 2006; Taraniuk et al., 2007; Duarte et al. 2004; Sannigrahi et al., 2005; etc.).

Specific comments: There doesn't seem to be a correspondence between the specific absorbance results reported for non-extracted SRFA in Table 4, and those shown graphically in Fig. 2. According to the Figure, the values given in the Table for SRFA (non-extracted) are too low.

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