

Interactive comment on “Determination of n-alkanes, PAHs and hopanes in atmospheric aerosol: evaluation and comparison of thermal desorption GC-MS and solvent extraction GC-MS approaches” by Meng Wang et al.

Anonymous Referee #1

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Line 81. The use of quartz filters is needed for easy thermal desorption analysis; however, there are many artifacts associated with these filters. The adsorption of vapors is well known, and this can affect measurements. What is the estimated contribution of this artifacts to the measurements? A set of samples with a backup filter would have provide information regarding this problem and if it contributed to differences in methods.

Line 87. There is no information regarding how the authors came up with the extraction volume, solvent mix, and sonication time. If this is a previously verified method,

there should add a reference. If it was selected after conducting preliminary extraction studies, it should be mentioned.

Line 90. There are several solvent extraction steps, and it is not clear if the suspended particles in solution were extracted with the solvent before adding new one. If this is the case considerable amounts of organics may have been removed with the particulates. This is important to consider when correcting for losses and differences in method. If particles were removed with the solvent between extraction steps, the difference between the two methods could be even greater.

Line 163. These differences indicate that the method results are dependent on the chemical properties of the sample and the n-alkanes loading, and it will need optimization for every set of samples collected in areas with different particle source profiles. Have authors test this method with samples of different nature than the ones collected in the China area? It will be important to evaluate feasibility of the analytical method for widespread use.

Line 199. The authors indicate there is a good correlation between methods once correction for the lower TD quantification. Is this realistic? A considerable analysis needs to be done to measure the efficiency of the TD method. Also, the solvent extraction method could be different, which leads to considerable number of variables that can change results. Either you always use one method, and compare samples always determined with the same issues, or evaluate differences before analysis and quantification of samples from different sources.

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Discussion paper

