

Interactive comment on “Unravelling airborne polycyclic aromatic hydrocarbons (PAHs) in southern China using tree-rings of 100-yr old *Pinus Kwangtungensis*” by Y. W. Kuang et al.

Anonymous Referee #3

Received and published: 7 November 2011

Simonich and Hites (1994, 1994) reported that, during spring and fall, gas-phase PAH partition into vegetation, and that during summer, some PAH volatilize and return to the atmosphere. They concluded that the results of their study provide further evidence that atmospheric semivolatile organic compounds undergo an annual partitioning cycle with the surface of the earth.

More recently, Katsoyiannis et al., (2011) re-examined the usefulness of molecular diagnostic ratios (MDRs) as markers of different source categories of PAHs. They concluded that variations in combustion conditions and environmental degradation processes preclude its use, because substantial variability in the emission and degra-

C11536

dation of individual PAHs, potentially undermine the application of MDRs as reliable source apportionment tools. The authors need to demonstrate that the PAH ratio approach they used provides unbiased, meaningful results. Staci L. Simonich & Ronald A. Hites - Importance of vegetation in removing polycyclic aromatic hydrocarbons from the atmosphere; *Nature* 370, 49 – 51, 1994; doi:10.1038/370049a0 Staci L. Simonich & Ronald A. Hites – Vegetation- Atmosphere partitioning of polycyclic aromatic hydrocarbons; *Environ. Sci. & Technol.*, 28, 939-943, 1994; DOI: 10.1021/es00054a028

Athanasios Katsoyiannis, Andrew J. Sweetman, and Kevin C. Jones - PAH Molecular Diagnostic Ratios Applied to Atmospheric Sources: A Critical Evaluation Using Two Decades of Source Inventory and Air Concentration Data from the UK. *Environ. Sci. Technol.*, 45 (20), 8897–8906, 2011.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 27359, 2011.

C11537