Mandalakis, M., Gustafsson, O., Alsberg, T., Reddy, C., Xu, L., Klanova, J., Holoubek, I., and Stephanou, E., *Contribution of biomass burning to polycyclic aromatic hydrocarbons in European background aerosols*, Env. Sci. and Technol., 2005; v39, 2976-2982

Radiocarbon anal. of atm. polycyclic arom. hydrocarbons (PAHs) from three background areas in Sweden, Croatia, and Greece was performed to apportion their origin between fossil and biomass combustion. Diagnostic ratios of PAHs implied that wood and coal combustion was relatively more important in the northern European site, while combustion of fossil fuels was the dominant source of PAHs to the two central-southern European background sites. The radiocarbon content (D14C) of atm. PAHs in Sweden ranged between -388.permill. and -381.permill., while more depleted values were obsd. for Greece (-914.permill.) and Croatia (-888.permill.). Using a 14C isotopic mass balance model it was calcd. that biomass burning contributes nearly 10% of the total PAH burden in the studied southern European atm. with fossil fuel combustion making up the 90% balance. In contrast, biomass burning contributes about 50% of total PAHs in the atm. at the Swedish site. Our results suggest that the relative contributions of biomass burning and fossil fuels to atm. PAHs may differ considerably between countries, and therefore, different national control strategies might be needed if a further redn. of these pollutants is to be achieved on a continental-global scale.