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Organic aerosol composition in Alvão Natural Park, Portugal

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High-volume atmospheric particulate matter (PM_{10}) samples were collected during an intensive sampling campaign on August/September 2006 at the Alvão Natural Park, in the northern mountain region of Portugal, where summer ozone exceedances have been registered over the last years. A small portion of the filters were analysed by a thermal-optical method to determine the elemental and organic carbon (EC and OC). The particulate organic matter was then solvent extracted and fractionated by vacuum flash chromatography into different classes of compounds whose structure were characterised by Gas Chromatography - Mass Spectrometry (GC-MS). The most representative constituents consist of fatty acids, n-alkanes, and alcohols. Some photochemical products from volatile organic compounds (VOC) emitted by vegetation were also present in the chromatographically resolved aerosol content. The organic speciation of samples enabled the choice of some key compounds to assess the contribution from several sources.