

Source apportionment of organic aerosols: The molecular marker approach

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Abstract:

Airborne particles pose serious health risks and have a controlling influence on the Earth's climate. This talk will begin with a general overview of atmospheric particles, highlighting typical concentrations and effects. The talk will then focus on the organic component of atmospheric particles. Organics contribute a significant fraction of fine particle mass across all regions of the atmosphere, but the sources of this material are poorly understood.

One approach to apportion organic particles to sources is to use individual organic compounds as source tracers; for example, cholesterol as a tracer for cooking emissions. The talk will illustrate the approach using a large ambient dataset collected in Pittsburgh, Pennsylvania, which highlight its strengths and weaknesses . The talk concludes with a discussion of uncertainty based on integrating results from different models and laboratory experiments.