

1.103 Volatile Organic Compounds at the Urban, Marine and Biogenic interface in South-East Australia.

Early Career Scientist

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Abstract:

Ambient concentrations of VOCs were measured in Wollongong, NSW, as part of a large ambient measurement campaign that took place in summer 2012-2013. The campaign yielded a rich dataset characterising atmospheric composition at the ocean/forest/urban interface, an environment which is typical of many cities in south-east Australia. The 8-week campaign yielded time series for VOCs from which typical ambient summertime values were derived. The most abundant VOCs were all oxygenated species (methanol, formaldehyde, acetone and acetaldehyde). The main source of the measured VOCs was the forested escarpment that encircles the Wollongong region to the west. Comparison with measurements made in 1996-2001 indicates decreased emissions of anthropogenic VOCs from vehicular traffic in the intervening years. Biogenic VOC mole fractions an order of magnitude higher than average were associated with atypically warm weather on two days in January 2013. These elevated levels of VOCs were associated with higher ozone. This has implications for air quality policy under a warming climate, since biogenic emissions cannot be subjected to emission controls.