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Title:	Quantification of BVOC emissions from Mahogany (<i>Swietenia macrophylla</i> King) measured using a dynamic branch cuvette system and proton transfer reaction mass spectrometry (PTR-MS)
Authors:	P., Lejish V. (/jspui/browse?type=author&value=P.%2C+Lejish+V.)
Keywords:	Volatile Organic Compounds Spectrometry Quadrupole Mass analyzer Detector Transmission Emission of BVOCs
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Abstract:	Biogenic volatile organic compound (BVOC) emissions act as strong precursors of secondary pollutants such as ozone and secondary organic aerosol, with consequences also for cloud formation and the regional climate. Here, we quantified the emission flux of naturally-growing Mahogany (<i>Swietenia macrophylla</i> King) using a dynamic branch cuvette and rapid VOC measurements made using a high sensitivity proton transfer reaction mass spectrometer (PTR-MS). It was found that <i>Swietenia macrophylla</i> King emitted very high rates of monoterpenes with highest emissions during the monsoon season with peak hourly values reaching as high as 13 nanomols m ⁻² s ⁻¹ . Surprisingly, significant co-emission of dimethyl sulfide (DMS) that have recently been observed in ambient air over tropical rainforests was also observed, with a maximum emission flux of 48 picomols m ⁻² s ⁻¹ during post-monsoon season. Apart from light and temperature, a relationship between carbon assimilation and the fluxes was also observed.
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