



PARTICULATE MATTER POLLUTION IN UNIVERSITY AREA: TRAFFIC FLOW ANALYSIS

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Abstract

University campuses can be seen as 'small cities' due to their high population (students, professors, employees) and corresponding high traffic flow, which may have a significant impact on both environment and people health. The objective of this work was to analyze particulate matter seasonal trends in the university area of Cosenza (University of Calabria). The relationship between sources emission, meteorological parameters and particle properties was defined. Sampling was conducted from June to October 2008. Using image analysis, three particle morphologies were observed: chain (engine emissions), crustal and biological particles (soil erosion and pollen). A linear relation between traffic flow and particle size was observed, especially in fine fraction. These results suggest that particulate pollution may represent a problem in the university area, where private transport is a main source. Sustainable mobility applied to a university campus could be an action to reduce pollution.

Key words: chain particles, scanning electron microscopy, sustainable mobility, traffic flow, University campus

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