

Slope Effect in Emission Evaluation to Assess Real Pollutant Factors

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Abstract : The exposure to outdoor air pollution causes lung cancer and increases the risk of bladder cancer. Because air pollution in urban areas is mainly caused by transportation, it is necessary to evaluate pollutant exhaust emissions from vehicles during their real-world use. Nevertheless their evaluation and reduction is a key problem, especially in the cities, that account for more than 50% of world population. A particular attention was given to the slope variability along the streets during each journey performed by the instrumented vehicle. In this paper we dealt with the problem of describing a quantitatively approach for the reconstruction of GPS coordinates and altitude, in the context of correlation study between driving cycles / emission / geographical location, during an experimental campaign realized with some instrumented cars. Finally the slope analysis can be correlated to the emission and consumption values in a specific road position, and it could be evaluated its influence on their behaviour.

Keywords : air pollution, driving cycles, GPS signal, slope, emission factor, fuel consumption

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