

MEASUREMENT OF POLLUTANT EMISSIONS OF BUSES WITH DRIVING CYCLES REPRESENTATIVE OF REAL TRAFFIC CONDITIONS

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Pollutant emissions from road vehicles are strongly linked to their use and functioning conditions. With the aim to evaluate the emissions of buses, the most used method is to measure exhaust pollutants on the basis of driving cycles. This study intended to link the pollutant emissions from buses to their driving conditions and to the urban context. Four bus routes representative of Paris Urban region were selected associating analysis of bus operating conditions and the urban characteristics collected and managed by a GIS (Geographical Information System). Cinematic parameters of buses were measured in commercial on these routes and used to draw new specific driving cycles. Pollutant emissions of three buses were the measured on a chassis-dynamometer. Pollutant emissions change as a function of vehicle type (engine and particle filter) and traffic conditions. The most representative parameters of traffic congestion are speed, number of stops per kilometre and acceleration rate. This study allows us to associate pollutant emissions to the corresponding driving conditions and geographical areas (housing, employment, ...). This can help RATP as a Public Transport Company to deploy the most environment friendly buses in the most sensitive areas. Envisaged in the case of the Ile de France region, this procedure constitutes a methodological basis for all networks characterised by GIS.