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# METHOD FOR INVENTORYING CO EMISSIONS FROM ROAD TRAFFIC IN URBAN AREAS THROUGH TRANSPORT MODELING

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## Abstract

*Carbon monoxide (CO)* is a gas obtained both from natural sources (bush fires, volcanic emissions and electric discharges) and by anthropogenic processes (incomplete combustion of fossil fuels). Together with particulate matter, nitrogen oxides and hydrocarbons, it is part of the air pollutants associated with the transport sector, which have a negative impact on human health, animals and vegetation. In this paper the authors propose a methodology for assessing CO emissions from road traffic in urban areas, created by harmonization between a *traffic estimation model*, which takes into account the land use functions and the user behavior, and a *CO emissions estimation model*, which takes into consideration the average travel speed and the engine type of each motor vehicle from the traffic flow. Within the case study in which this methodology is applied we have estimated a reduction in the CO emissions produced by road traffic in the city of Pitesti, as a result of the fact that the existing road network was completed with a bypass road. It is highlighted that for the internal network of the city, in the peak traffic interval in the morning, the level of emissions in the atmosphere is 30% lower than in the case in which the transit traffic would use the urban network instead of the bypass road. The presented methodology is a very useful tool in quantifying the environmental impact produced by road traffic, specific to different situations of land use and transport networks.

*Key words:* air pollution, carbon monoxide, road traffic, traffic model, urban area

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