

Validity of Chase Car Data Used in Developing Emissions Cycles

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Abstract

In an effort to ensure vehicle compliance with US air quality policies, driving cycles--profiles of average driving behavior--have been constructed to characterize the driving behavior of the overall fleet. The cycles are built from chase car data, speed-time profiles of in-use vehicles recorded using a chase car method. This study evaluates the acceptability of using chase car data as the foundation for driving cycle development and recommends changes in the current data collection protocol. Two data issues are closely examined: 1) the effectiveness of the current target vehicle selection procedure and, 2) the validity of blending data collected from target vehicles with data collected from the chase car; a method used when target vehicles are unavailable. Although in the aggregate there do not appear to be significant discrepancies between these chase car and target vehicle data, when examined at disaggregate levels significant differences appear that could impact the representativeness of existing driving cycles. Recommendations include increasing the proportion of target to chase car data in future databases by improving the existing protocol and considering use of different recording technology.

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