

The fuel consumption and NOx emission optimisation for future diesel passenger cars

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Abstract

The future emission legislations for diesel passenger cars are likely to include more dynamic test cycles than we have today, such as the World harmonized Light duty Testing Cycle (WLTC) and Real Drive Emissions (RDE) in the EU and very challenging SULEV legislations in the USA. In order to meet these emission legislations and challenging CO₂ targets, more complex Exhaust Gas After Treatment Systems - EGATS and corresponding calibration strategies are needed. The calibration strategies have to provide the best possible fuel consumption and NOx emissions across the entire engine map for all tested cycles. The aim of this paper is to evaluate the effect of several EGATS configurations and calibrations on tailpipe NOx and CO₂ emissions of a D segment vehicle. The experimental results and potential of various EGATS configurations and calibrations for the optimisation of fuel consumption and NOx emissions are presented and discussed.