

研究室名	加藤彰研究室 論文発表
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題名	Investigating the effects of first idle time and ambient temperature on real driving emissions of passenger cars
掲載雑誌	International Journal of Air Quality, Atmosphere & Health (Impact factor 5.1 (2022))
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概要	<p>Internal combustion engines are one of the major factors of global warming and greenhouse gasses, as they emit harmful emissions such as CO₂, CO, HC, and NO_x. Therefore, the regulations on CO₂ and other exhaust emissions for vehicles are gradually being tightened. In this study, exhaust emissions of the spark ignition engine are measured by using the portable emissions measurement system and compact exhaust gas analyzer for the vehicle used in tests carried out according to Real Driving Emission procedures to reach sustainable environmental future. The effects of the ambient temperature (AT) at the start of the engine and the time from starting the engine of the vehicle to the moment of first departure on the exhaust emissions released along the test route were investigated. By increasing the first idle time (IT), reductions in CO, THC, and NO_x emissions during the test route are approximately found as 23%, 45%, and 66.5%, respectively. Better emission values are achieved during the test with the effect of increasing the AT. In the tests carried out along the determined route, it has been observed that increasing the first IT of the engine and the AT that the vehicle is waiting for reduces the emission values.</p>
関連画像	