Workshop title

Reducing vehicle exhaust, brake and tyre emissions to improve air quality

Workshop proposer(s)

Dimitris Margaritis

Abstract

The workshop will address emissions from all types of road vehicles (cars, buses, light and heavy goods vehicles), from different sources: powertrain/exhaust, brake wear and tyre/road wear. It will focus on driving behaviour and vehicle maintenance, testing and retrofit issues, as well as cloud based systems and how these affect different types of emissions.

The focus will be finalised or ongoing EU projects which consider all types of emissions from road vehicles (not only exhaust emissions) and how changes in the behaviour of vehicle owner, drivers and fleet managers can contribute to improving air quality as well as reducing greenhouse gas emissions. This goes a step beyond previous initiatives concerning eco-driving (which focuses on reducing fuel use and CO2 emissions), to consider wider factors. With increasing deployment of alternative vehicle powertrains (electric, hydrogen) and greener, more fuel-efficient internal combustion engines, sources of emissions other than from the exhaust tailpipe are areas where there is scope for improvement, notably from brakes, tyres and from the road surface.

The workshop will present current knowledge on different characteristics of vehicle emissions and how they correlate with each other, as well as which types of driving behaviour can affect them. From this knowledge, low-emission driving styles have been derived. It will present and discuss the methodology for testing and measuring different types of emissions according to driving style, by on road tests (Portable Emission Monitory Systems – PEMS) and in laboratory tests.

The effects of On-Board Diagnostics (OBD) inspection, maintenance and retrofits will be covered, including under which circumstances different retrofit technologies can provide benefits and an analysis of the vehicle testing regimes in several countries, legislation on tampering with vehicle equipment, and identified legislative gaps.

Finally, a panel discussion will focus on best practice on impact assessment for in-vehicle ITS solutions for emissions reduction and the need to converge and harmonise different approaches to enable the potential impacts of different solutions to be compared.

Keywords

- Low-emission driving
- Emissions from powertrain, brakes and tyres
- Driver behaviour: training, performance and acceptance
- Evaluation and impact assessment of Intelligent Transport Systems for emissions reduction

Topics of interest

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