

Local emissions from road vehicles

To reach a sustainable transport system, “near zero” local emissions is needed in urban areas. The most important local emissions are NO_x and particulate matter (PM) emissions. Since modern exhaust gas aftertreatment systems (EATS) are more efficient, the tailpipe emissions will be comparable to many other sources including wear particles from brakes, tyres and road. Also, since hybridization is effective to reduce (global) CO_2 emissions, the tailpipe emissions will be even lower. On the other hand electrified vehicles tend to be heavier and have more torque which may increase the wear particles emissions. In order to understand the different contribution to local emissions from road vehicles, the current project aims at developing a measurement methodology that could enable data of higher quality and thus serve policymakers for better decisions and in the end, decrease the negative effects on human health.

We have started a new collaboration between the division of Combustion and Propulsion Systems (CaPS) at M2 and the division of Microwave and Optical Remote sensing (MOF) at SEE to address this challenge. A Portable Emission Measurement System (PEMS) will be applied on vehicles to measure their tailpipe emissions during driving conditions. In parallel, a measurement vehicle equipped with fast state of the art instrumentation, will be used in parallel to measure the ambient air close downwind the vehicle (while driving). Differences in tailpipe and downwind emissions will be analyzed.



We are looking for two highly motivated students from with interest in emission control and measurement techniques. You must also have a valid Swedish type B driving license.

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