



Emissions of black carbon and co-pollutants emitted from diesel vehicles in the Mexico City Metropolitan Area

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Black carbon emitted from freight, public transport, and heavy duty trucks sources is linked with adverse effects on human health. In addition, the control of emissions of black carbon, an important short-lived climate forcing agent (SLCF), has recently been considered as one of the key strategies for mitigating regional near-term climate change. Despite the availability of new emissions control technologies for reducing emissions from diesel-powered mobile sources, their introduction is still not widespread in many urban areas and there is a need to characterize real-world emission rates of black carbon from this key source.

The emissions of black carbon, organic carbon, and other gaseous and particle pollutants from diesel-powered mobile sources in Mexico were characterized by deploying a mobile laboratory equipped with real-time instrumentation in Mexico City as part of the SLCFs-Mexico 2013 project. From February 25-28 of 2013 the emissions from selected diesel-powered vehicles were measured in both controlled experiments and real-world on-road driving conditions. Sampled vehicles had several emissions levels technologies, including: EPA98, EPA03, EPA04, EURO₃₋₅, and Hybrid. All vehicles were sampled using diesel fuel and several vehicles were measured using both diesel and biodiesel fuels. Additional measurements included the use of a remote sensing unit for the co-sampling of all tested vehicles, and the installation and operation of a Portable Emissions Measurements System (PEMS) for the measurement of emissions from a test vehicle.

We will present inter-comparisons of the emission factors obtained among the various vehicle technologies that were sampled during the experiment as well as the inter-comparison of results from the various sampling platforms. The results can be used to