Goods Movement and the Measured Real-Time Emissions from Heavy-Duty Diesel Trucks

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The quantitative impact of real-world emissions during goods movement with heavy-duty trucks is of great interest in academia, industry and government and information is scarce. New tools now allow us to measure the real-time emissions and to investigate this topic in greater depth than before. First, the advent of on-road laboratories such as the UCR/CE-CERT's Mobile Emissions Laboratory (MEL) has allowed us to determine on-road emission factors as a function of time over different driving patterns, such as encountered on the 710 Freeway. Second, advances in instrument technology have made possible real time measurements of PM. With these new tools, we can now directly measure and evaluate standardized test cycles relative to nonstandard real-world driving conditions, a task that would have been considered impossible a few years ago. Our presentation will show the impact of driving patterns on the measured real-time emission rate of criteria pollutants, including PM, and the integrated toxic emissions for a heavy-duty truck.