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High-Resolution Urban Monitoring of Greenhouse Gases and Pollutants

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There is increasing interest in making high-resolution measurements of greenhouse gases and pollutants in urban areas to help discern source contributions, monitor pollution migration, and validate air quality models. Currently, these applications are limited by the poor spatial resolution of fixed air monitoring stations. We present very high-resolution measurements of CO_2, CH_4, H_2O, and NO_2 taken throughout the San Francisco Bay Area, California using a mobile monitoring platform. These measurements cover several highly urban and coastal regions that were repeatedly monitored over the course of a month. The data clearly shows the presence of several discrete sources and the migration of pollution through adjacent neighborhoods. Moreover, this validation study demonstrates the ease of mobile monitoring and the possibility of extending this platform to several other gas species.