

Communiqué de presse



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NEW AIRPARIF ANALYSIS FINDS ULTRAFINE PARTICLE POLLUTION MORE THAN DOUBLES ON PARISIAN ROADWAYS

Ultrafine particle monitoring campaign supported by Bloomberg Philanthropies and City of Paris reveals unregulated air pollutants nearby roads in Paris

11 December 2023 (Paris, France) – Today, Airparif released new analysis revealing that the levels of ultrafine particle pollution in Paris are more than two times higher near road traffic than levels further from roads. The findings result from a first joint measuring campaign from Airparif, Bloomberg Philanthropies, and the City of Paris using technology to monitor levels of ultrafine particles and deepen the scientific understanding of air pollution – to better target public policies to improve air quality in the city. These findings are part of Airparif's ongoing efforts to improve understanding of non-regulated and hazardous pollutants, following the recommendations from the French Agency for Food, Environmental and Occupational Health & Safety (ANSES) and the World Health Organization (WHO).

Through this campaign, Airparif examined the chemical composition of ultrafine particles, which revealed that their primary sources are road traffic, wood burning for domestic heating, and a combination of polluting gases. Ultrafine particles, measuring less than 100 nm in diameter (1,000 times finer than a strand of human hair), are currently unregulated, with little understanding of its sources but widely acknowledged for their health impacts. The smaller the particles, the greater their threat to public health.

This first monitoring campaign took place at sites selected across various Parisian environments from February to April 2022—close and far to road traffic routes—to best identify activities and sources contributing to ultrafine particle emissions and assess temporal and spatial variations in levels. These included monitoring sites in central Paris near the city's periphery boulevard (Boulevard Périphérique), close to a major Parisian boulevard, and within an urban area in the 18th arrondissement.

Using cutting-edge technology and advanced monitoring tools, elevated levels of ultrafine particle pollution were found, with amounts ranging from two to two and a half times higher, along the monitored traffic routes (21,900 particles/cm³ along Boulevard Haussmann, 25,600 particles/cm³ along the Boulevard Périphérique Est than away from traffic routes (between 9,900 and 10,800 particles/cm³).

The chemical composition analysis of the ultrafine particles highlighted not only those originating from traffic on the monitored roads but also background pollution. Notably, there was a substantial presence of particles emitted by wood heating at all monitoring sites, along with secondary particles resulting from the transformation of polluting gases in the atmosphere (21,900 particles/cm³ along

Boulevard Haussmann, 25,600 particles/cm⁻³ along the Boulevard Périphérique Est) compared to areas away from these routes (between 9,900 and 10,800 particles/cm⁻³). This study also included data from summer monitoring (excluding the impact of wood heating) to comprehend the yearly variations in ultrafine particle levels throughout seasons.

As a next step, AIRLAB and Airparif's Open Innovation Laboratory are collaborating to analyse ultrafine particle levels based on vehicle types and speeds, thanks to vehicle recognition cameras. Accounting for pollution based on road traffic characteristics will help Paris better grasp the factors resulting in variations between ultrafine particle emissions from road traffic. The outcomes will be detailed in a second report scheduled for publication in 2024.

The monitoring tools that made [ultrafine particle measurement](#) possible were based on condensation nucleus counters. This technology makes it possible to count the number of very small particles (between 5 and 400 nanometres in diameter) present in the air and to classify them according to their size, with measurements taken every five minutes (unlike micro-sensor tools that do not measure particles that small).

Since 2020, Airparif has monitored ultrafine particles throughout the greater Paris region in both winter and summer to document, for the first time, levels and sources of ultrafine particles in residential and urban environments, road traffic, and airports across the greater Paris region. [Monitoring campaigns](#) for ultrafine particles have also been implemented in metro and RER (Regional Express Network) stations in the greater Paris region.

Read [the analysis](#)

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About Airparif: Airparif is the independent air quality observatory of the Île-de-France region accredited by the French ministry in charge of the environment. Airparif's mission is to: monitor air quality impacting Ile-de-France residents using a robust and reliable measuring system; help understand air pollution, its impacts and its evolution, by participating in knowledge building and transfer; support citizens, and all stakeholders, to improve air quality in relation to energy and climate, by helping to inform and provide its expertise for the development and evaluation of action plans; and innovate by supporting new solutions that improve air pollution and evaluate the performance of these innovations. Learn more about Airparif at www.airparif.fr.

About Bloomberg Philanthropies' Global Clean Air Program: Bloomberg Philanthropies leads the world's most ambitious clean air effort that aims to improve air quality through support for city pilot projects and partnerships with national governments and organizations. In 2018, Bloomberg Philanthropies announced support for the Denver Love My Air program, which deployed air quality sensors to track hyper-local air quality data at Denver Public Schools and made data broadly available to help residents and city leaders respond to local air quality. Since 2019, Bloomberg Philanthropies has worked with the cities of London and Paris – providing vital insights on low-cost air quality sensors and launching awareness campaigns to mobilize public action. Breathe Cities, backed by a \$30 million commitment from Mike Bloomberg, builds on the success of this work and Bloomberg Philanthropies'

other clean air partnerships with Brussels, Jakarta, Milan, Warsaw, and other governments around the world.

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