

Assessing Street Level Ultrafine Particle Exposure in New York City

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Ultrafine Particles play a significant role in PM toxicity because of their ability to transport toxicants, which are carried via the bloodstream to expose virtually all cells in the body. The goal of our project is to compare UFPs between Enmont C-100 and Discmini and compare them to PM_{2.5} and black carbon. There were six biking sessions, which covered about 100 mile distance. Twenty monitors were used to measure UFPs, PM_{2.5}, BC and sound level etc. R language was used to compare and map a set of street level air pollutants. Our initial findings were UFP counts measured from DiscMini showed a good correlation with those from Enmont C100 and street level UFP concentrations showed a high spatial variability in urban area. Furthermore, the correlations among UFP, BC and PM_{2.5} varied by day, which indicated the three pollutants should be measured simultaneously in urban air pollution studies.