

## 1.232 Low-cost Sensors in the Study of Air Quality in San Juan Metro Area Following Hurricane Maria.

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Abstract:

After the impact of Hurricane Maria, the electric grid in Puerto Rico was devastated, with over 90% of the island without electricity. Still six months later, the service was unstable and more than 10% of the population was without grid electricity. The main objective of this project is to analyze how the air quality (AQ) of the island has been affected with the increase in the use of power generators post hurricane María and to evaluate how AQ changes when electrical power is restored. Four different sampling locations were selected in the San Juan Metro Area (SJMA). Low-cost sensors were key in monitoring air quality of the SJMA. Since November 2017, Real-time Affordable Multi-Pollutant monitors (RAMPs) were deployed at the four different locations to monitor CO, SO<sub>2</sub>, and optical particulate matter (PM<sub>2.5</sub>) concentrations. A microaethalometer to monitor black carbon (BC) and a Microtops sunphotometer to monitor aerosol optical thickness (AOT) were rotated among some of the locations. A black carbon monitor and a particle counter

(OPC) were deployed at the super site location of the University of Puerto Rico-Rio Piedras Campus. Results up to now show that, in the first weeks of sampling, SO<sub>2</sub> often exceeded the National Ambient Air Quality Standards (75ppb/hr). After four months of sampling and as the power is restored and fewer generators are used, concentrations of CO, SO<sub>2</sub> and BC were found ca. 50% lower. Detailed results regarding variations in the concentrations of BC, CO, PM<sub>2.5</sub>, SO<sub>2</sub>, and AOT during daytime/nighttime and for the different locations studied in the SJMA will be presented at the conference. We will also present the case study of January 1, 2018, which might have been affected by the excessive ignition of fireworks in this period.