1.157 An investigation of air pollution levels along selected roads in Nairobi, Kenya.

Early Career Scientist

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Abstract:

This paper presents a statistical analysis of air quality monitoring at three major roads and Industrial Area in Nairobi. The study was carried out using various gas analyzers and samplers mounted in a Mobile Air Monitoring Laboratory (MAML) van. The report realized extremely high values of black carbon which went beyond the upper limit of the instruments (50,000 ŋg/m^3) during the day in Landhies road. Nakumatt Junction recorded extreme values of Black carbon (14,008 ŋg/m^3) in the evening peaks while Pangani Roundabout, the diurnal mean value was extreme (14,446.5 ng/m^3). None of the four sites exceeded the WHO 24 hour limit for both PM_{10} (50 µg/m^3) and $PM_{2.5}$ (25 µg/m^3). The 24 hour mean of PM10 in the three sites also did not exceed the ambient air quality tolerance Kenyan limit of 100 µg/Nm^3 and 150 µg/Nm^3 in Industrial Area. Oxide of nitrogen showed two pronounced peaks, one in the morning and the other in the evening. The diurnal mean of SO_2 over the four sites was generally low with the highest amount of 1.08 ppb recorded at Pangani Roundabout. It is recommended that efforts be made to maintain or even reduce further the present pollution levels, meaning concerted efforts need to be made to find a sustainable balance between industry, human health and environmental protection.