

## **1.054 Long term ground level ozone observations in Malaysia: Spatio-temporal variability and challenges in mitigation.**

Early Career Scientist

Presenting Author:

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Abstract:

Long term (> 10 years) ground level ozone measurements from ambient air quality networks provide an opportunity to determine ozone behaviour over space and time. Coupled with precursor and meteorological data, these measurements can provide information on the relative influence of emissions and local meteorology on ozone concentration and identify potential mitigation challenges. Data from more than 40 ambient air quality stations that were deployed in stages by the Department of Environment Malaysia since 1996 to 2015 were analysed to determine the spatio-temporal variability of ozone. Peak ozone concentrations did not exceed Malaysian Ambient Air Quality Guideline of 100 ppbv for the duration of the study period at the Malaysian Borneo island while it was frequently exceeded in the Malaysian Peninsular. Within the Malaysian Peninsular, several hotspots were identified. The seasonal cycle, ozone weekend effect and diurnal ozone observations highlight the variability of ozone within a small geographical area as well as the influence of long range transport of pollutants. The mitigation challenges include the risk of ozone increasing at certain areas due to 'blanket' regulations of NO<sub>x</sub> emissions. The current work is expected to provide an overview of ground level ozone variability and highlight potential challenges in ozone mitigation.