4.014 Identifying air pollution sources in Beijing, Taiwan and Malaysia using air mass footprints.

Early Career Scientist

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Abstract:

The UK Met Office's NAME dispersion model has been used to interpret air quality measurements from Beijing, China, Bachok, Malaysia and Taiwan, China. Depending on the season and meteorological conditions the air quality in Beijing, China, Bachok, Malaysia and Taiwan, China is affect by the transportation of particles from China. The NAME model produces footprints that depict the air mass residence time over the previous 5 or 10 days. These footprints show the passageway of the air arriving at the monitoring stations. Regional influences can be assessed by calculating the time the air masses have spent over each region before arriving at the stations. For example in Beijing there are distinct changes in Particulate Matter (PM), CO and NO_2 levels, according to whether the air has remained stagnant over Beijing or whether there are strong winds carrying it from much further afield. In addition, multiple techniques, such as cluster analysis of the footprints and combining the model with an emission inventory, can be used to enhance the interpretation of the air quality measurements.