

Study and Analysis of Particulate Matter Sources in Lampang

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This research aims to study and analyze the sources of particulate matter (PM) in Lampang which is measured by the Pollution Control Department (PCD) at 4 stations: 1) Department of Meteorology Phrabat, 2) Health Promotion Hospital Ban Soppad, 3) Bandong District Administrative Organization and 4) Mae Moh Provincial Waterworks Authority. Unusual periods of high PM were analyzed using multiple linear regression and then modelled the air mass trajectories in both backward and forward analysis using the Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) trajectory model. Trajectories were produced every 6 hours for 7 days during the peak of PM levels. The results showed that PM in Lampang was high during February - April. The source of PM in the district of Phrabat, Soppad and Mae Moh stations were transported from the northwest and the southwest. The source of PM in Bandong district was from the southwest and southeast. All trajectories passed through where the hotspots (data from MODIS C6 active fire product) was located. We also noted that the source of PM in Lampang is caused from the forest fire or open burning in the local area as well.

Keywords : particulate matter, Multiple Linear Regression, HYSPLIT, MODIS C6

Primary authors: Ms INPUN, Supaporn; Ms JUMKHAMMOON, Anchanida; Dr SONKAEW, Thiranan; Dr MACATANGAY, Ronald; SILLAPAPIROMSUK, Sopittaporn

Presenters: Ms INPUN, Supaporn; Ms JUMKHAMMOON, Anchanida

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