

Air Pollution Model: Co-benefits on regional and local air quality.

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The contents of my presentation are ...

- (1) Model Simulation of long-range transport of PM_{2.5} during January to March 2013 from China to Japan.

During January to March 2013, Beijing and some major Chinese cities experienced severe PM_{2.5} pollution, and these polluted air mass was transported to Korea and Japan. And it became a large social concern in Japan. Model simulation was performed to understand the factors contributing this extreme event.

- (2) Observation and model simulation of severe haze event in June 2013 at Johor, Malaysia due to biomass burning in Sumatra Island, Indonesia.

Continuous monitoring of fine particulate matter in the atmosphere has been performed since October 2012 at the UTM campus, Malaysia. We observed very high haze event during June 2013 due to biomass burning occurred in Sumatra Island, Indonesia. Also, we performed model simulation to reproduce the observed haze event. By using the satellite retrieval data of location and intensity of forest fire, we could well reproduced the trans-boundary haze pollution.

- (3) Development of personal exposure model to estimate the health impact by indoor and outdoor air pollution and its application to Chinese 31 provinces.

This year, we estimated indoor and outdoor PM_{2.5} emission from energy use in residential sector by various energy source in Chinese provinces. And we calculated the personal exposure using micro environmental exposure model.

- (4) Long-term (15years) trend analysis of Satellite retrieval vertical column concentration of NO₂ and Aerosol Optical Depth (AOD) around Asian region.

To obtain the recent trend of Short-lived Climate Pollutants (SLCP) concentration around Asian region, we extracted 15years trend of NO₂ vertical column concentration and Aerosol Optical Depth (AOD) observed by satellite sensor. From this analysis, apparent increasing trend and its rate could be obtained.

- (5) Design of framework to calculate co-benefits of low carbon society policies and air pollution mitigation, especially for residential sector and urban activities.

By integrating the recent progress described above, we designed the frameworks to calculate co-benefits of low carbon society policies and air pollution mitigation, especially for residential sector and urban activities