



## **The Contribution of Fire and Non-fire Pollutants to Regional Air Quality in Southeast Asia**

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Haze in Southeast Asia has been covered extensively by local media and thus attracted attentions of general public and governments in the past few years due to its impacts on local economy, air quality and public health. Widespread biomass burning activities are a major source of haze events in Southeast Asia. On the other hand, particulate pollutants from human activities other than biomass burning also play an important role in degrading air quality of Southeast Asia. These pollutants can be both locally produced and brought in from neighbouring regions by long-range transport. A better understanding of the respective contributions of fire (i.e. biomass burning) and non-fire (i.e. fossil fuel) aerosols to air quality and visibility degradation becomes an urgent task in making effective mitigation policies of air pollution in Southeast Asia.

In this study, we aim to examine and quantify the contributions of fire and non-fire aerosols to air quality and visibility degradation over Southeast Asia. Three numerical simulations have been conducted using the Weather Research and Forecasting (WRF) model coupled with a chemistry component (WRF-Chem) driven by different aerosol emissions from: (a) fossil fuel burning only, (b) biomass burning only, and (c) both fossil fuel and biomass burning. By comparing the results of these three experiments, we have examined the corresponding impacts of fossil fuel and biomass burning emissions, separately and combined, on the air quality and visibility of the region.