



A case study of the June 2013 Biomass-Burning Haze event using WRF-Chem

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This study aims to identify the effects of tropical storm Bebinca on the transboundary transport of forest fire emissions from Sumatra during the June 2013 Southeast Asian haze event. WRF-Chem is used to simulate the formation and transport of biomass-burning haze during the study period of 16th to 26th June 2013. The emissions in WRF-Chem are specified according to the FLAMBE database which is derived from the MODIS fire products and are mapped onto a 27-km spatial grid. The simulation results show that biomass burning over Sumatra was intensified as a result of subsidence due to the storm Bebinca from 19th to 24th June 2013. The transport of PM2.5 emissions shifted from a north-easterly to a northerly direction as storm Beninca travelled from east to west between 15 degrees north and 20 degrees north. Reduced forest fire hotspots and emissions were observed as the storm subsided, marking the end of the haze episode. The model was evaluated by comparing the results with meteorological and air quality data for Malaysia during the haze episode.