# **Abstract Details**

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- **Organization:** Department of Atmopsheric Sciences, National Central University, Tai
  - **Category:** Ocean and Atmospheres
  - Paper ID: 57-00A-A1348
    - Title: IMPACT OF ASIAN DUST ON AIR QUALITY IN TAIWAN: AN INTEGRAT MODELING STUDY

### Abstract:

Department of Atmospheric Sciences, National Central University, Ch Taiwan. nhlin@cc.ncu.edu.tw This study is aimed at quantifying the ir Asian dust storms on the air quality of Taiwan using the HYSPLIT moc driven by the meteorological fields of MM5 which was initiated with E( global 2.50x2.50 dataset. Nested grid sizes of 81 and 27 km were ad for MM5 simulations. Dust source regions were identified through FGC ground observations. The source strength was determined based on threshold friction velocity, relative humidity and soil type. Three case: invaded Taiwan were studied. The ground-based observations showed northern Taiwan was generally impacted by dust storms. For instance baseline air quality monitoring station in Wan-Li, located at the northe coast, PM10 can be enhanced 10 times from below 30 to above 300 r Quantitatively, simulated PM10 distribution was generally in a good agreement with observations, except for central Taiwan where more complicated topographic effects dominated. However, model can well the timing that dust plume reached Taiwan. The spatial dust distributi also compared with TOMS aerosol index. Moreover, simulations with t km resolution showed a better performance in PM10 distribution over than with the coarser one, indicating the advantage of a combined co and finer meteorological dataset to drive the dispersion and long-rand transport of the Asian dusts for assessing their impact on local air qua

#### **Presentation Mode:**

Keywords: Asian dust, air quality, HYSPLIT

Status: Reviewed.

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