Long term trends in air pollution in China

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With the rapid growth of industries and population in China over the past 30 years, the air pollutants emissions have increased and resulted in high pollution levels than past. This study predicts ozone and particulate matter (PM) in China over the past 30 years from 1990 to 2019 using the Community Multi-scale Air Quality (CMAQ) model. The meteorology in China over the past 30 years has been acquired by using Weather Research and Forecasting (WRF) model version 4.1.2. The past 30 years' anthropogenic emissions were generated based on the Emissions Database for Global Atmospheric Research (EDGAR). The emissions after 2012 were adjusted based on factors reflecting control measures. And the biogenic emission was from the Model for Emissions of Gases and Aerosols from Nature (MEGAN) version 2.1. The open burning emissions was from National Center for Atmospheric Research (NCAR) while the dust and sea salt emissions were generated in line CMAQ. The long term trends of emissions and ambient concentrations with spatial and temporal variations of air pollutants from 1990 to 2019 will be investigated after model validation against available measurements in China and around countries/regions.

Keywords: WRF, CMAQ, Chinese Air Pollution Trend

