

Regional transport of ozone and its precursors to Southeast Louisiana

Hao Guo¹, *Hongliang Zhang^{1,2}

1. Louisiana State University, 2. NUIST

The Community Multi-scale Air Quality (CMAQ) model with modified photochemical mechanism is used to investigate the contributions of regional transport to ozone (O₃) and its precursors to Southeast Louisiana in summer months from 2006 to 2015. Contributions from eight different source sectors and regions to the 8 hour average daytime O₃ concentrations will be determined. The source types including residential wood combustion, on-road transportation, oil and gas, off-road, electric generating utilities (EGU), open burning, industry and other sources. After the local sources are quantified, transport of upwind sources is determined. Contributions of different source regions to direct O₃ concentrations or its precursors will be obtained. Under favorable transport conditions, the maximum contribution to 1 hour O₃ from each region will also be evaluated. Changes of the contributions of regional transport by comparing different years will show the effectiveness of previous control measures. The results would provide valuable information on controlling local and regional emissions of O₃ precursors for improve O₃ air quality in Southeast Louisiana.

Keywords: Ozone, Regional transport, Photochemical mechanism, CMAQ, Southeast Louisiana