



## **Source Apportionments of Air Pollutant Emissions Sources for “Air Quality Improvement Plan” in Seoul Metropolitan Area, Korea**

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To setup a better air quality improvement plan, we need to understand exactly how emission from each source type such as area, mobile, and point sources, including biogenic emissions influences on air pollutant concentrations. The primary goal of this study is to estimate high order sensitivity coefficients to explain non-linearity characteristics in air pollution phenomena such as ozone and particulate matters to predict their changes associated with changes in their emissions and precursors to understand the relationship between emissions and concentrations. In order to investigate influences of emissions from a region and a source type on air pollutant concentrations over the Seoul metropolitan area in the study and contributions of air pollutant species and their transports between two regions, simulations using CMAQ HDDM are planned to have the first and second sensitivity coefficients which will be used to predict air pollutant concentrations corresponding to emissions changes in future urban and air quality implementation plans. It is also expected that how air pollutants emitted from Seoul affect air quality over Kyunggi and Incheon, how emission from each source type influences on air pollutant concentrations, and contributions of different chemical species like NO<sub>x</sub> and VOC on ozone and particulate matter concentrations for a region of interest.

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