

## Intercontinental transport of aerosols: Results of source attribution and source/receptor relationship from HTAP2/AeroCom III model experiments

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Aerosol, also known as particulate matter (PM), is one of the major air pollutants determining ambient air quality. It also affects weather and climate through the aerosol-radiation-cloud interactions. Although its lifetime is relatively short (a few days), aerosol originated from one region can be transported to downwind regions and high altitudes to impose large scale to global influences. In this study, we will present results from multi-model experiments coordinated by the United Nations' Task Force on Hemispheric Transport of Air Pollution (HTAP) in its Phase 2 study. We first evaluate simulations by eight participating global models on (a) surface aerosol concentrations over North America, Europe, and Asia with available measurements and (b) AOD over the world with AERONET data, then we estimate the source attributions in the northern hemispheric regions of North America (NAM), Europe (EUR), South Asia (SAS), East Asia (EAS), and the Arctic (ARC), and finally we estimate the "Response to extra-regional emission reduction (RERER)" in the above regions.

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