

tance of primary sulfate along the Atlantic seaboard of the United States. During winter the model estimates that more than 50% of the ambient ground-level sulfate concentrations is due to primary sulfate. This is because there are large emissions of primary sulfate from heating units that have low stacks, and also because the production of secondary sulfate is slower in the winter.

Hales and Dana (1979), sampled summer precipitation in the vicinity of St. Louis during the METROMEX Project. When normalized to the precipitation amount, the sulfate and nitrate concentrations in samples taken during individual storms showed well-defined maxima downwind of the city. The deposition of sulfate and nitrate during convective storms, as measured by the network, were comparable in magnitude to emission rates of SO_x and NO_x from the St. Louis urban source. The data seemed to indicate that reactive scavenging of locally emitted SO_2 , rather than scavenging of regional sulfate, was the important mechanism.

In Nova Scotia, Shaw (1982) sampled aerosol sulfate and precipitation during a one-year period at a site 25 km from Halifax, a city of 300,000. Through an analysis of back-trajectories and wind patterns, he concluded that 40 to 50% of the deposition of sulfur and hydrogen ion at the site during precipitation were due to emissions from Halifax; the deposition during precipitation was consistent with a removal coefficient for sulfur of $2 \times 10^{-4} \text{ s}^{-1}$ or about $70\% \text{ h}^{-1}$. On an annual basis, these results indicate that about 10% of the sulfur emitted in Halifax is deposited by precipitation within 25 km of the city. Watt et al. (1979), found a significant increase of hydrogen ion and sulfate concentrations in lake water in the vicinity of Halifax as they sampled closer to the city, implying that sources in Halifax were an important factor contributing to the concentrations.

Wiltshire (1979), carried out a sulfur budget for Nova Scotia by analyzing actual data for total deposition and concentration and comparing them with deposition from Nova Scotian sources as estimated by a simple model. He concluded that, on the average, 25% of the total (wet plus dry) deposition of sulfur in Nova Scotia is due to emissions from Nova Scotian sources. Furthermore, 30% of Nova Scotian emissions are deposited within that