

of travel. This may, in turn, have a significant effect upon the models' predictions at longer distances. Improved knowledge and predictions of mesoscale effects should, therefore, improve the predictions of the LRTAP models.

(e) When computing sulfur and nitrogen budgets using existing deposition monitoring network data, the deposition sink terms may be underestimated, since most of the existing networks in North America are of a "regional" nature, and an attempt is made to locate samplers as far away as possible from large local sources. It is important to assess the magnitude of this underestimation.

The assessment of air pollution concentrations and surface deposition, which is attributable to local sources in a given area, must include: (a) the contribution to the specific location from long-range transport; and (b) the contribution to the specific location from sources that are located within a specified distance (less than a few hundred kilometers). Being able to distinguish the local/mesoscale contribution from the long-range transport contribution is especially important to the U.S./Canada Transboundary Committee. This information is necessary to determine the most effective control measures to recommend.

This report will address two aspects of the local/mesoscale problem:

(a) A discussion of evidence of local and mesoscale transport and deposition, including transboundary flow that has been reported in the literature and in data sets. Factors affecting the importance of local effects will also be discussed.

(b) A survey of available and applicable local/mesoscale models worthy of consideration and testing.

The emphasis will be on sulfur and nitrogen compounds which lead to acid deposition. However, some discussion of ozone, particulate matter and hazardous organics will also be included.