

Much is known about the physical process of atmospheric transport and transformation and deposition of acidic substances and their precursors, but some uncertainties remain. The extent to which these uncertainties affect the reliability of model results is an important question in designing appropriate control strategies.

In the interests of brevity and clarity, some simplifications have been made in the analyses of results presented and discussed in this report but a major effort has been made to review the main features of all currently available research findings, both published and unpublished, in order to specify the range of uncertainty that characterizes the results presented in this report.

Although many substances may undergo transboundary atmospheric transport and have harmful effects upon either atmospheric or surface receptors, acidic deposition has been the phenomenon of primary concern for the Work Group. Emphasis has also been placed on the development of a "transfer matrix" which is a form of model output which generally relates the contribution of source areas to a sensitive receptor area.

For the analysis of transport, transformation and deposition to be useful, a designation of the pollutant or pollutants believed to be causing the damage to man or his environment is required. Relatively more information is available for sulfur and its species than for oxides of nitrogen. For this reason, and others, Work Group 2 has focussed its efforts primarily on sulfur emissions and depositions over larger time and space scales in eastern North America.

It is clearly recognized that many of the chemical transformations of acid-related substances in the atmosphere are non-linear. The significance of these non-linear processes on the source-receptor relationships obtained from the Work Group 2 models, which make linear