of non-linear chemistry. Likewise, the effects of non-linear processes may diminish as larger space and time scales are used. The magnitude of the reduction in error, if any, resulting from such aggregation is not known at this time.

11.2.5 Long Range Transport Models as Assessment Tools

- Concentrations and depositions (both dry and wet) of sulfur compounds are predicted by long range transport models using simplified formulations. These simplifications result from (1) an incomplete understanding of some of the physical and chemical processes; (2) limitations in the data available for model input; (3) the paucity of data for testing deposition simulations and (4) the difference between the model and process scales.

- Using available wet deposition measurements, current models are able to reproduce the correct order of magnitude of the large time and space scale features of measured wet sulfur deposition fields.

- Model evaluation, that is, the statistical comparison between model predictions and observed values, is not yet considered to be complete. For the 1978 data set, most models appear to perform relatively better in predicting the deposition of sulfate in precipitation than in predicting sulfur concentrations in ground level air.

- The eight long range transport models have been used to produce tables (that is, transfer matrices) which relate sulfur emissions from specific regions to the deposition of sulfate in precipitation and ambient sulfur concentrations in specific regions. The transfer matrices of the different models exhibit variations among the magnitudes of the transfer matrix elements. This variability could lead to substantial differences in the selection of optimum emission reduction scenarios depending upon the particular model applied and the level of detail required. The long range transport models examined by the Work Group predict generally similar relative impacts on receptor regions in terms of ranked order of