

constants are assumed to be independent of the emissions and the co-pollutant concentrations. These simplifications of the physical/chemical processes, some of which are known to be non-linear, will introduce some errors into the model results and make the models generally inappropriate for local scale episodic analyses. The model profiles are summarized in a tabular form in Section 7.2 and detailed profiles are available as supporting technical material for this report.

A set of criteria for evaluating models against observed data has been developed during the workshops held by the Regional Modeling Subgroup. These evaluation criteria were derived from the basic recommendations of the Workshop on Dispersion Model Performance sponsored by the American Meteorological Society. The theoretical framework for the evaluation criteria is developed in the Regional Modeling Subgroup report (2F-M) while the results of the model evaluation are briefly described in Section 7.3. Due to uncertainties in the input emission inventory, the precipitation data used by the models and the measurement data used for validation, a ranking of the models in terms of their absolute performance cannot be made at this time.

The assumptions of linearity in the transformation and wet deposition processes that are incorporated into all eight models may also be questioned. The non-linearity of several of the processes is described in Chapters 4 and 5. However, non-linear chemistry modules have either not been available or have not been incorporated into the current long range transport models. The question, that is the subject of individual judgment, is whether or not the linear models of sulfur transport represent a reasonable first approximation over the long term. It is not clear that non-linear effects will invalidate the general seasonal and annual results of these linear models. The question of whether or not the linear models of sulfur transport represent a reasonable first approximation over the long term and large space scales has not been resolved by the Work Group. Although Chapter 8 will deal