6. For many of the parameters under consideration, during the winter months, rates are strongly dependent on latitude--e.g., photochemical conversion rates of sulfur and nitrogen oxides above 45°N become negligible, as do also wet deposition rates of gases such as sulfur dioxide (because precipitation is largely in the form of dry snow). This indicates that not only the seasonal, but also the spatial variability of deposition and transformation rates should be taken into account in long-range transport models. Although it may be too early to speculate, the following approach does not seem unreasonable: during the summer months, one might assume, as a first approximation, the same values for deposition/transformation parameters regardless of location, for each species of interest. During the winter months, while rates at the southerly latitudes might stay roughly the same as those in the summer, the models would include a dependence of deposition/transformation on latitude, which could be quite pronounced for some of the parameters (such as wet deposition of sulfur dioxide).

7. For the sulfur compounds, more experimental data are badly needed, both under summer and wintertime conditions, particularly on wet and dry deposition rates of particulates and chemical transformation rates in regional scale air masses (as opposed to chimney plumes). Very little is also known about in-cloud transformation and deposition processes. For the nitrogen compounds, data are required in almost every area of interest, and immediate support for laboratory and field investigations into deposition and transformation rates of the major species (NO, NO_2, HNO_3, nitrates, and PAN) is strongly recommended.