

sufficient uncertainty in them to make it difficult to draw any conclusions regarding long term temporal trends in either the acidity itself or the precursor emissions. This is not to say that trends do not in fact exist, but if they do, the available data are incomplete and too unreliable to quantify their existence.

The next step, after looking at long-term historical deposition, is to evaluate shorter periods where high quality deposition data do exist. These data are compared to sulfur emissions values for the same period. Swedish investigators have done this with the data from the European network and found that various geographical groupings of stations appear to suggest different trends over various extended time intervals. They offer the plausible suggestion that these differences mainly reflect interannual variations in the atmospheric transport patterns. If true, the variability imposed on the deposition trends by changing airflows, even averaged over the period of a year, has a strong bearing on the use of deposition data to detect benefits from emission reductions. Improvements resulting from emission restrictions could be exaggerated or minimized even over five year intervals. One would then be forced to rely on the use of long range transport models (particularly their meteorological components) to demonstrate benefit and, as is argued, such models possess considerable uncertainty at present. It should be noted that the year-to-year variability of pollution concentration in precipitation may be attributed to factors other than transport differences. There may be, for example, chemistry complications or other factors like the amount of sunlight (or dry deposition) that vary from year to year. During some lengthy periods, at some stations, the trends of sulfate concentration in precipitation are even opposite to those of emissions of sulfur dioxide in northern Europe. These periods and stations have been quoted as demonstrating our lack of understanding of the behavior of sulfur. But other periods and groups of stations have pollution deposition trends which are at least qualitatively in phase with