The importance of "precipitation regime" derives from such factors as frequency of precipitation, type of storm, and relative contributions of rain and snow to the total precipitation. In general, for a given atmospheric loading condition, more frequent precipitation will result in greater wet deposition. Storm type, to a large extent, governs the scavenging regime. For example, a summer convective storm which draws up air from surrounding regions will be conducive to in-cloud scavenging by nucleation and $SO_2$ uptake and oxidation. On the other hand, continuous precipitation falling through a polluted air mass would be expected to scavenge primarily below cloud. In northern regions, where dry snow is frequent, many scavenging processes, except those for $HNO_3$ and below-cloud interception of particles, are probably inefficient. As in the case of dry deposition, wet deposition will be a function of time (season) and location (but in relation to the precipitation regime rather than to the underlying surface).

## 5.3 The Simulation of Deposition in MOI Models

The deposition processes are included in long range transport models using formulations which are well founded in the scientific literature and which simulate either the total dry or wet deposition pathway or the portion of it which is perceived to be dominant. The basic approach is to compute the deposition as the product of two factors: the first is a coefficient that provides a measure of removal rate, and the second is a measure of atmospheric concentration or mass.

In the case of dry deposition the total pathway, which includes all contributing processes, is simulated in the form

$$D_D = v_d \, c_a$$