$$D_W = k_W M_2$$

where M_2 is the column mass (ML^{-2}) and k_W is scavenging rate coefficient (T^{-1}), which may be written in the form

$$k_W = \beta p^a$$

Here β is a model-dependent constant, and a is equal to 1, 1, 0 and 0.625 respectively, for the four models.

The RCDM-3 model uses an expression for the fraction of ambient SO_2 and SO_4^{2-} removed per unit time, which is a function of a scavenging coefficient, precipitation rate, and average durations of wet and dry periods.

The CAPITA model makes use of a total (i.e., wet plus dry) removal rate coefficient for SO_2 and SO_4^{2-}. Here total deposition D_T is computed as

$$D_T = \lambda M_2$$

where λ is the removal rate coefficient (T^{-1}) which may be expressed as a probability of removal per time step, with a seasonal dependence.

A comparison of the deposition formulations in MOI models with current scientific knowledge shows that the simulations are done in a simplified way. Nevertheless, the main requirements relevant to the long range transport of sulfur emissions are fulfilled - that is, depletion of the atmospheric load and deposition at the surface. In most models a distinction is made between wet and dry deposition, and between SO_2 and SO_4^{2-}.