

Preliminary Conceptual Model - Causes of Haze in Ellis (ELLI1)

Due to the reason that a whole year of aerosol data is not available, no analysis about the 20% worst haze days can be done. Based on the data available from 6/2002-8/2003, sulfate transported from southeast Texas and eastern US in the warm season and regional nitrate in the winter are believed to be the important causes of haze.

In Ellis, the average $PM_{2.5}$ mass concentration during 6/2002-8/2003 is $7.4 \mu\text{g}/\text{m}^3$, and the average total light extinction coefficient (B_{ext}) is 57 Mm^{-1} (Visual Range $\sim 68 \text{ Km}$; Deciview ~ 17). Sulfate and nitrate are two of the largest contributors to haze, with an average contribution of 41% and 20%, respectively. Figure 2 indicates that sulfate in the summer and nitrate in the winter are the major causes of haze.

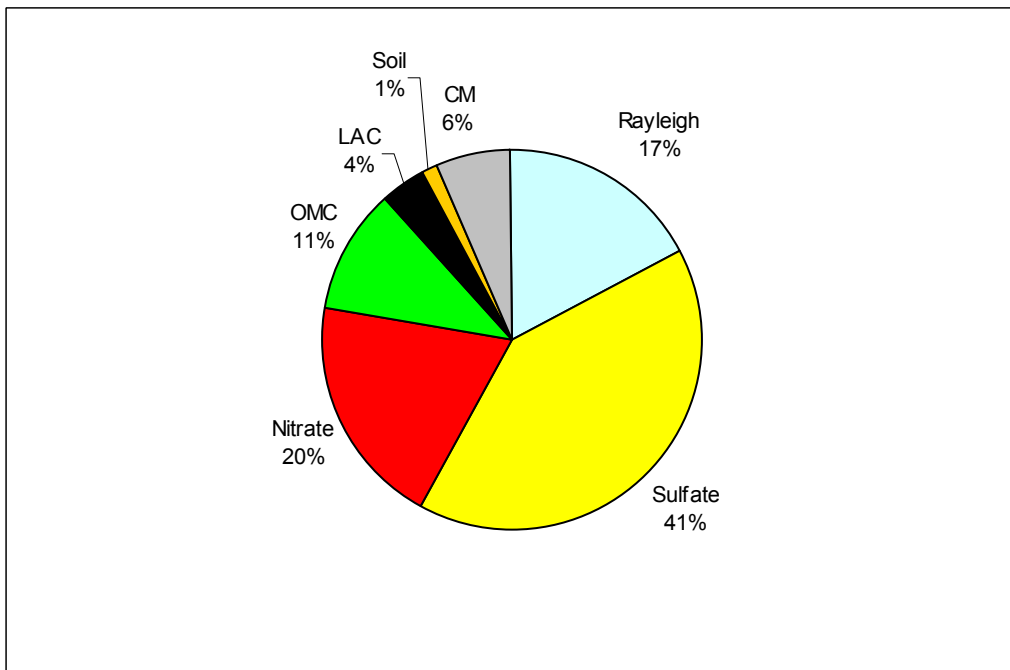


Figure 1. Average contributions of major aerosol chemical components to light extinction

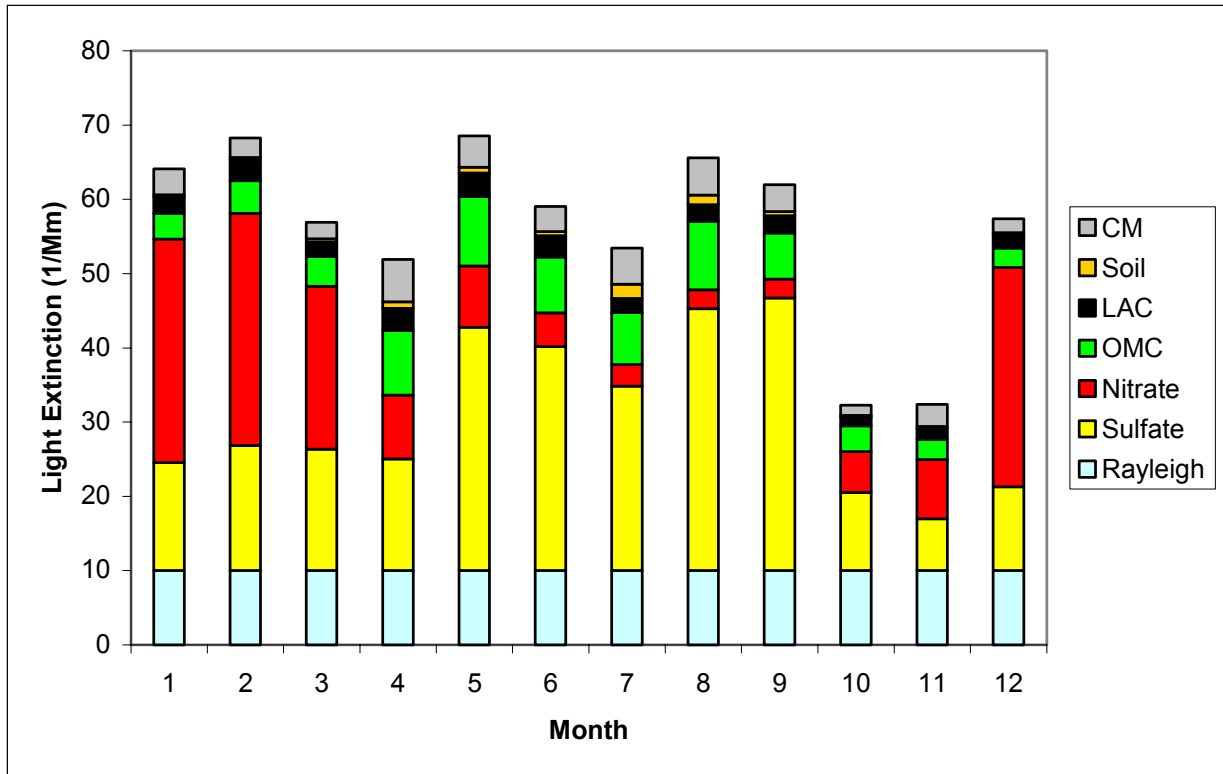


Figure 2. Average contributions of major aerosol chemical components to light extinction in each month