

Preliminary Conceptual Model - Causes of Haze in Sac and Fox (SAFO1)

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, regional sulfate and sulfate from eastern US in the summer, and regional nitrate in the winter are believed to be the important causes of haze.

In Sac and Fox, the average $PM_{2.5}$ mass concentration during 6/2002-8/2003 is $10 \mu\text{g}/\text{m}^3$, and the average total light extinction coefficient (B_{ext}) is 85 Mm^{-1} (Visual Range $\sim 46 \text{ Km}$; Deciview ~ 21). Sulfate and nitrate are two of the largest contributors to haze, with an average contribution of 40% and 25%, respectively. Figure 2 indicates that sulfate in the summer and nitrate in the winter are the major causes of haze. During winter, wind directions are primarily northwesterly to south-southwesterly. During summer, directions are more southerly.

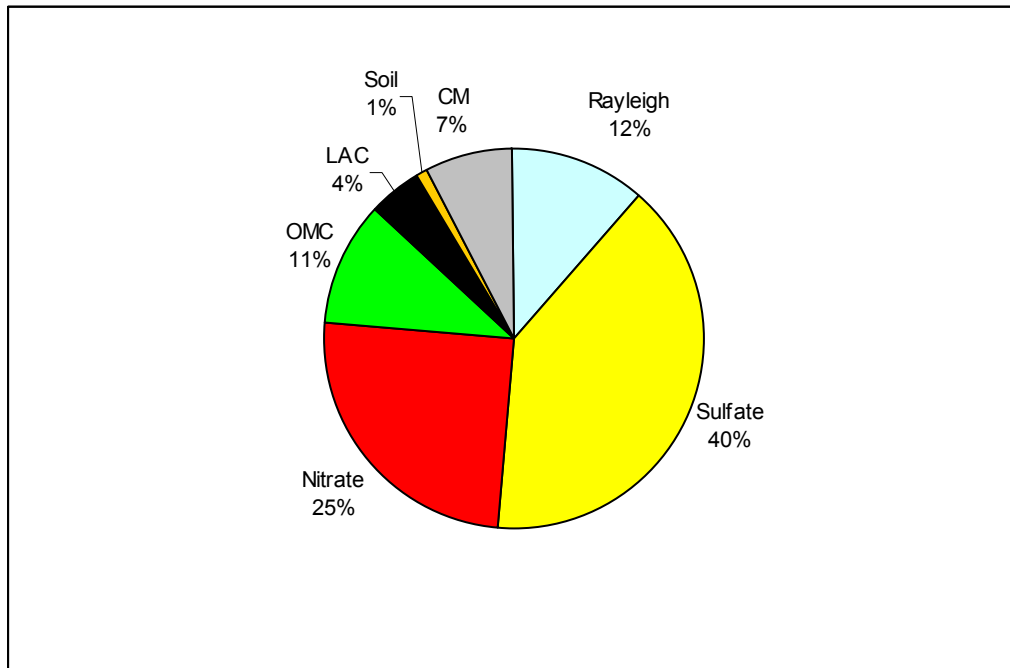


Figure 1. Average contributions of major aerosol chemical components to light extinction

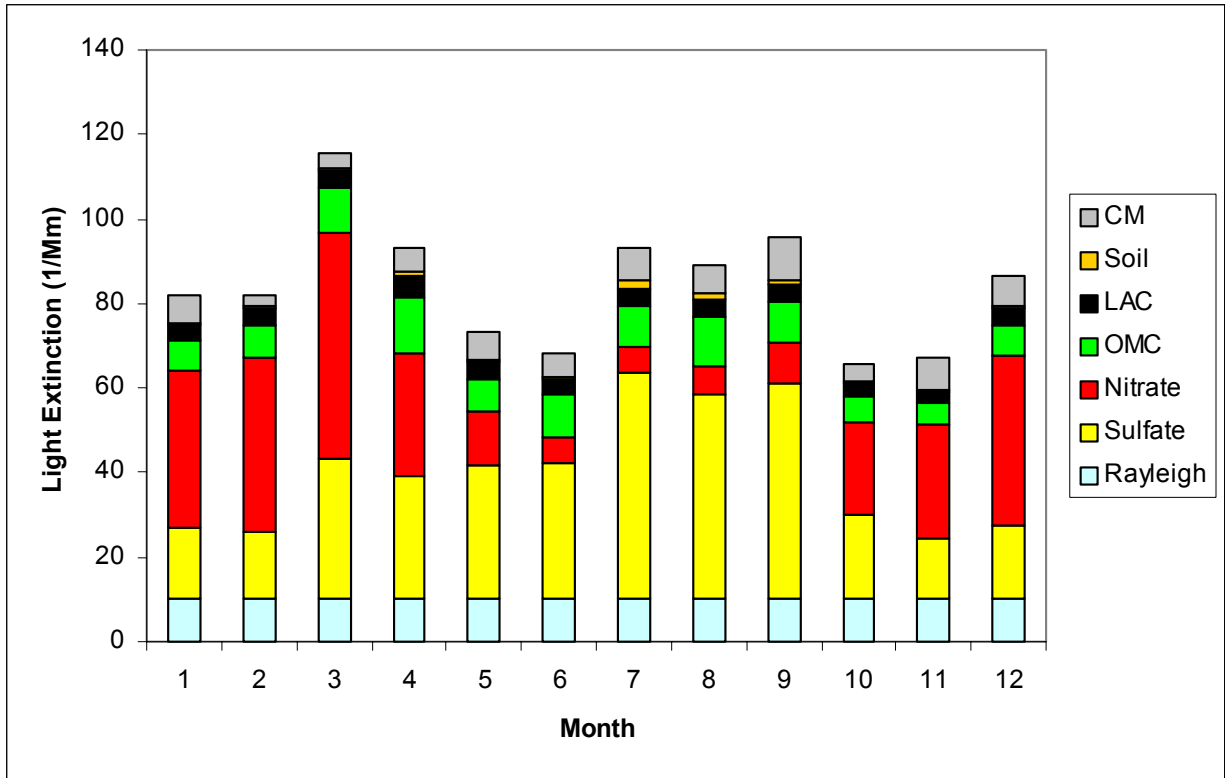


Figure 2. Average contributions of major aerosol chemical components to light extinction in each month