Contribution of Dust to Regional Haze
Based on Available IMPROVE Data From 1997-2002
(Provided by Marc Pitchford (NOAA) and Jin Xu (DRI), 01/14/04)

• Mean percentage contribution of dust (fine soil + coarse mass) to light extinction for all sampling days

• Percentage of sampling days when aerosol light extinction was dominated by dust (meaning its contribution was larger than any of the other four major categories - SO4, NO3, EC, OC)

• Fraction of the 20% worst days when dust dominated aerosol light extinction for each month

• Contribution of CM to dust light extinction during the 20% worst days when dust dominated aerosol light extinction for each month
In most of the western United States, the mean contribution of dust to light extinction is in the range of \( \sim 10 – 30\% \).
The percentage of sampling days when dust dominated aerosol light extinction is as high as \( \sim 50 - 70\% \) in some of the sites. “Dominated” means that it caused more light extinction than any of the other major categories -- SO4, NOx, EC, and OC.
Fraction of the 20% Worst Days When Dust Dominated Aerosol Light Extinction for Each Month

January
Lots of dusty days in the western US during the spring and summer
Contribution of CM to Dust Light Extinction During the 20% Worst Days When Dust Dominated Aerosol Light Extinction for Each Month

January
Coarse mass usually contributes more than about 80-90% to the dust light extinction. But during the month of April and May, especially along the west coast in April, the contribution of CM is relatively lower, suggesting possible influence of long-range transported dust.
Percentage Contribution (%) of CM to Dust (Soil+CM) Light Extinction
Percentage Contribution (%) of CM to Dust (Soil+CM) Light Extinction
August

Percentage Contribution (%) of CM to Dust (Soil+CM) Light Extinction
Percentage Contribution (%) of CM to Dust (Soil+CM) Light Extinction
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