Dust Observations in El Paso, Texas during the 2005 North American Monsoon Season

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Results Continued

Case Studies

August 11, 2005
A convective system generated high wind gusts (35 mph) in the region creating a huge dust storm (Figures 23, 24, 25).
Air parcels were associated with the monsoon bringing up moisture from the Gulf of California (Figure 20).
Dust concentrations from the CLIMET particle counter peaked around 7:40 PM (MST) (Figure 26).

Precipitation amounts in the region averaged 5 mm that day.

August 12, 2005
This was the rainiest day of the 2005 NAM season in EPDN with rainfall amounts of 23.3 mm on average.
Dust concentrations from the CLIMET particle counter were low throughout the day (Figure 27).
Air parcels were associated with NAM bringing up moisture from the Gulf of California (Figure 28).
Rain clouds are observable from the web-cam at Ranger Peak in El Paso, TX (Figure 29).

Conclusions

The statistical analyses carried out in this study suggest that dust concentrations (3 and 5 µm) and precipitation in the EPDN region are negatively correlated during NAM season.
Optical depth (cloud + aerosol) and precipitation data are positively correlated.
There are no significant correlations between dust and rainfall.
There is a positive correlation between optical depth (cloud + aerosol) and precipitation data (Figure 19).

The total precipitation received in EPDN during the 2005 monsoon season was 137.8 mm according to NWS/CNA, and 132.5 mm according to NCEP/CPC real time analysis (Figure 22).

Sources
http://www.arl.noaa.gov/HYSPLIT4.html
http://www.arl.noaa.gov/model/rt/precip_precip_surface.shtml
http://www.arl.noaa.gov/models/rt/rt_precip_last_month/Figuring.html
http://www.cpc.noaa.gov

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