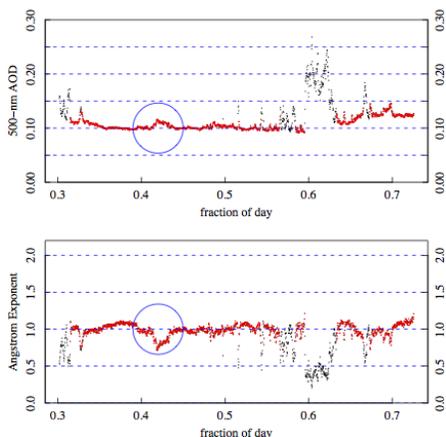


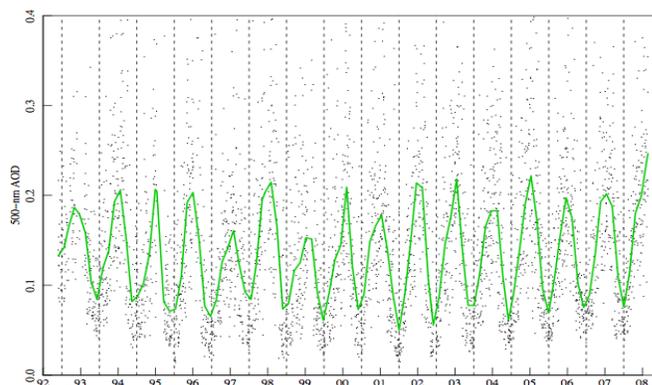
# Fourteen Years of Aerosol Optical Depth Measurements at the SGP Central Facility

Joseph Michalsky<sup>1</sup>, Frederick Denn<sup>2</sup>, Connor Flynn<sup>3</sup>, Gary Hodges<sup>4</sup>, Piotr Kiedron<sup>4</sup>, Annette Koontz<sup>3</sup>, James Schlemmer<sup>5</sup>, and Stephen Schwartz<sup>6</sup>

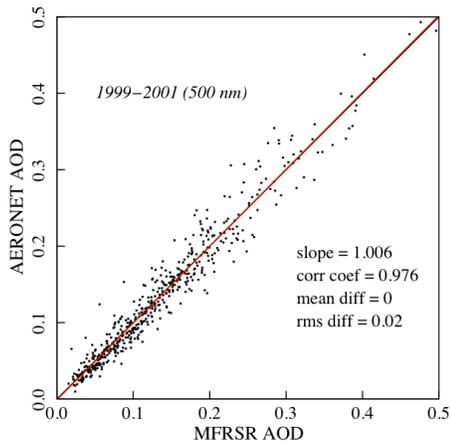
<sup>1</sup>NOAA/ESRL, <sup>2</sup>SSAI/NASA, <sup>3</sup>PNNL, <sup>4</sup>CIRES/University of Colorado, <sup>5</sup>SUNY Albany, <sup>6</sup>BNL



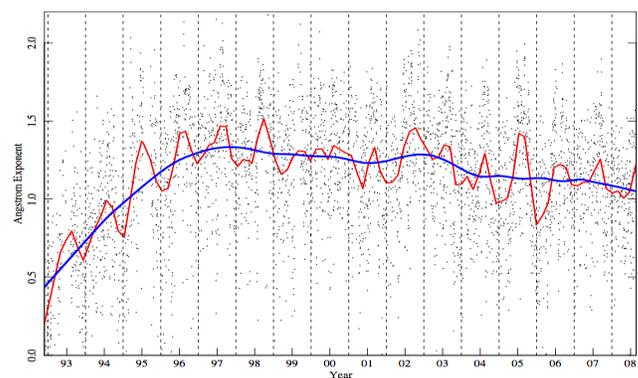
A new cloud-screening technique yields 50% more data. Circles are in twilight zone between clouds and aerosols?



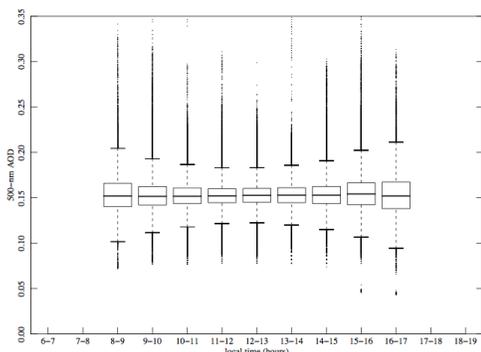
4000+ daily-averaged AODs and LOWESS estimate (green line) with 3-month window



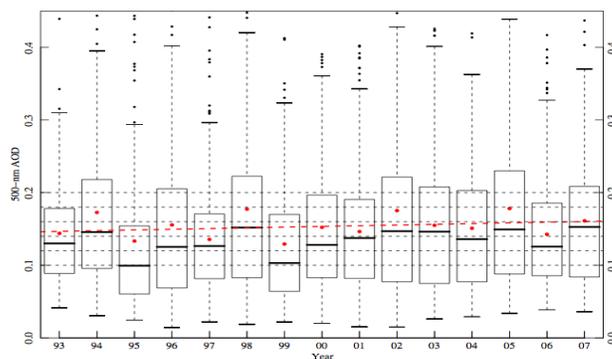
AERONET agrees with the MFRSR in daily-averaged aerosol optical depth (AOD).



Ångström exponents and LOWESS estimates with 6-month (red) and one-year (blue) window



There is no diurnal variability in the hourly median value over the day, but the early morning and late afternoon ranges are larger.



There is NO trend in annual averages (red dots) and large differences in median and inter-quartile ranges from year to year.