



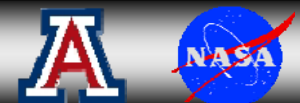
Air Quality Forecasts for Asthma Mitigation, Intervention, and Surveillance in the Southwest

Stan Morain
PHAIRS PI

Earth Data Analysis Center, UNM
for

UNM Project ECHO
Telemedicine Pulmonary Clinic
Video Conference

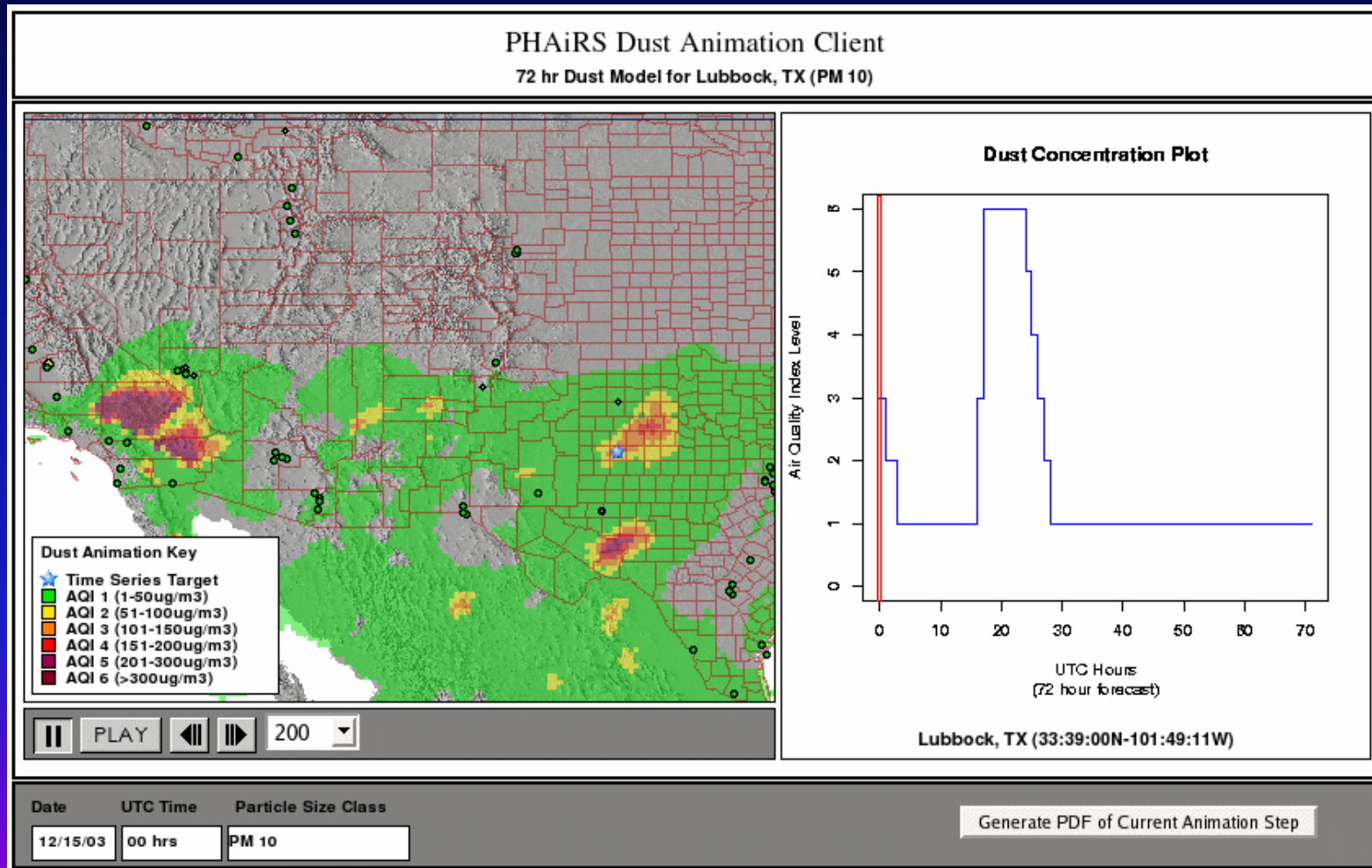
December 12, 2008





Dust Storm of December 15-17, 2003

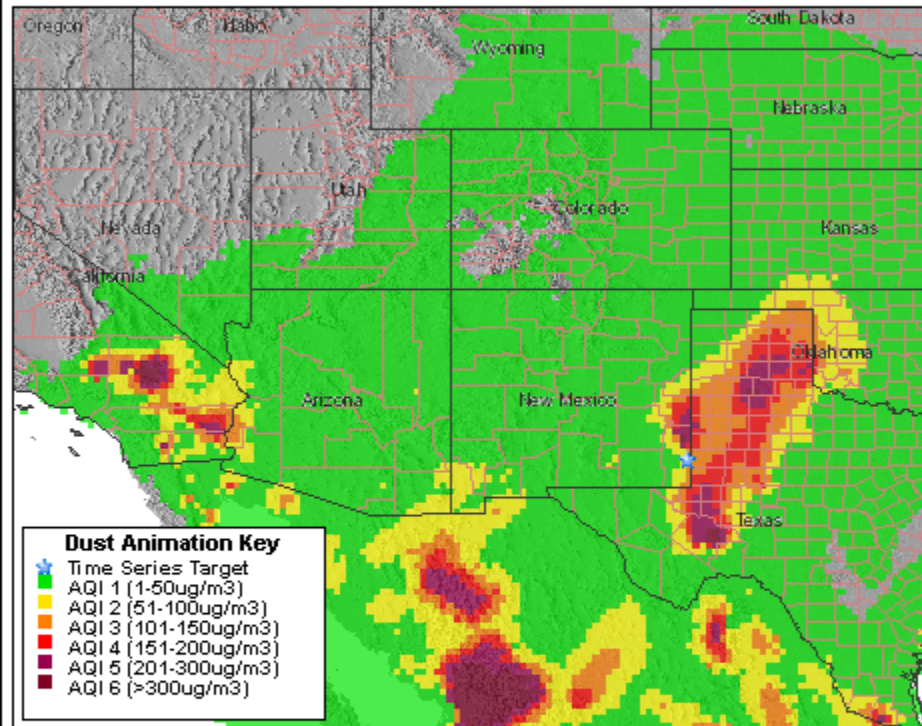
PM₁₀, Lubbock





PHAIRS Dust Animation Client

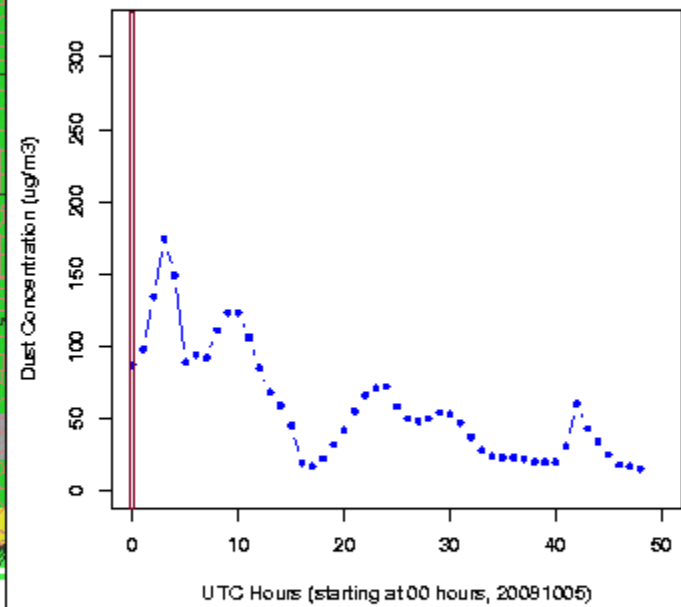
49 hr Dust Model for User Selected Point (pm10) beginning on 10-05-2008 at 00:00:00 hours UTC



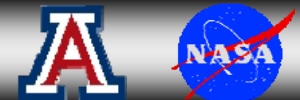
Control panel with buttons for Play, Stop, and a speed slider set to 200.

Date	UTC Time	Particle Size Class
10/05/08	00 hrs	pm10

Dust Concentration Plot



• DREAM Model Dust Concentration
• EPA AirNow Dust Concentration (when available)



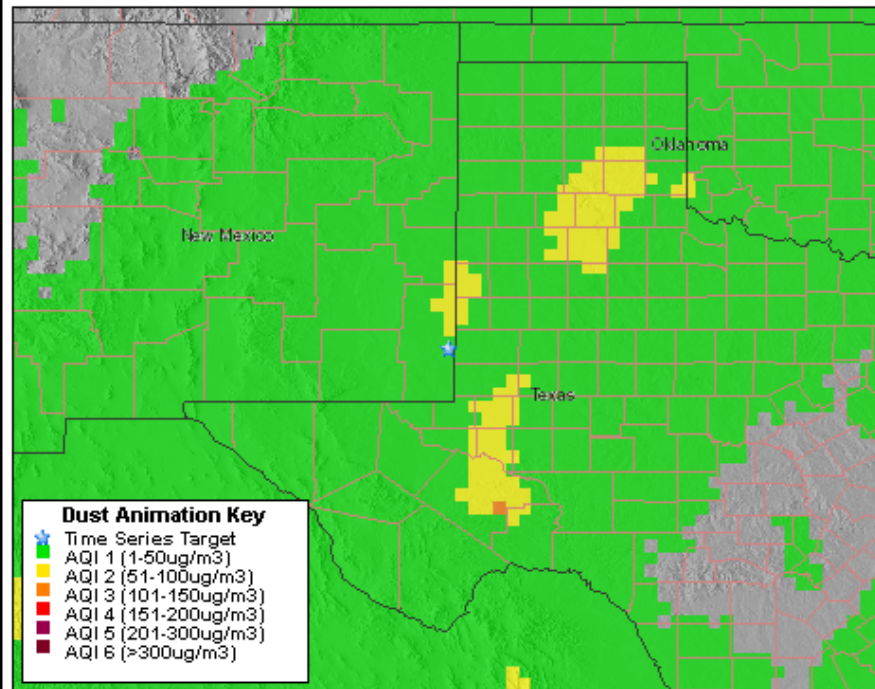


Hobbs, NM: Storm of Oct 5, 2008

PM2.5

PHAIRS Dust Animation Client

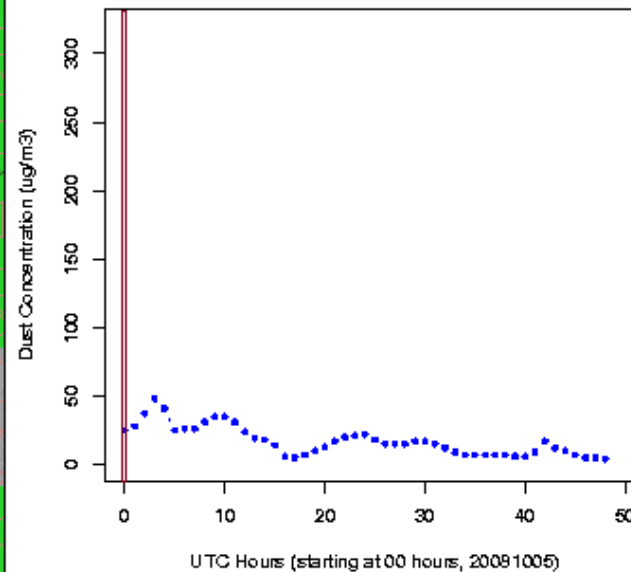
49 hr Dust Model for User Selected Point (pm25) beginning on 10-05-2008 at 00:00:00 hours UTC



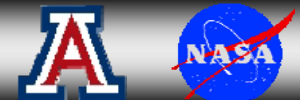
Control panel with buttons for Play, Stop, and a speed slider set to 200.

Date	UTC Time	Particle Size Class
10/05/08	00 hrs	pm25

Dust Concentration Plot



- DREAM Model Dust Concentration
- EPA AirNow Dust Concentration (when available)

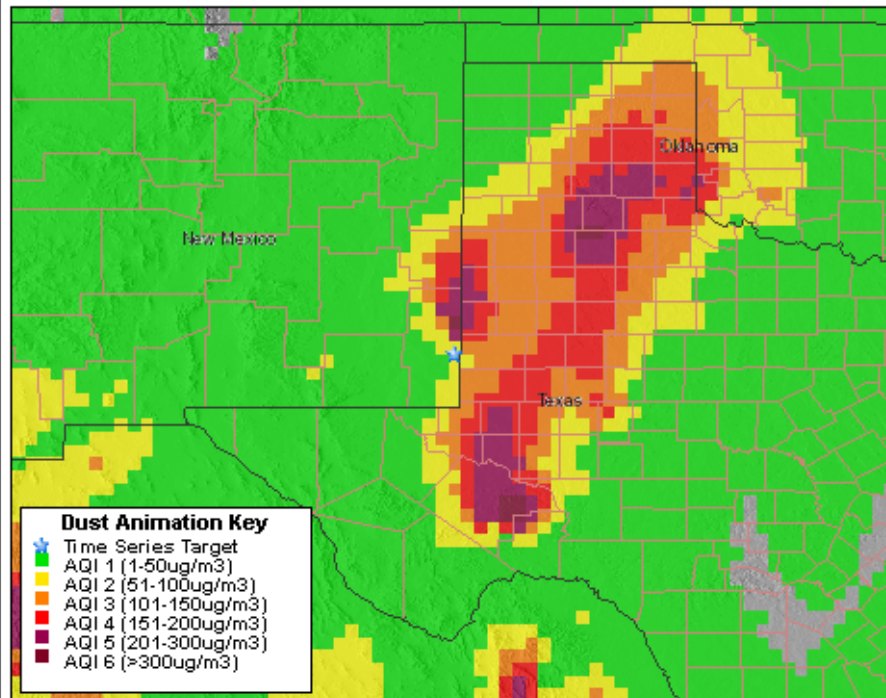




Hobbs, NM: Storm of Oct. 5, 2008

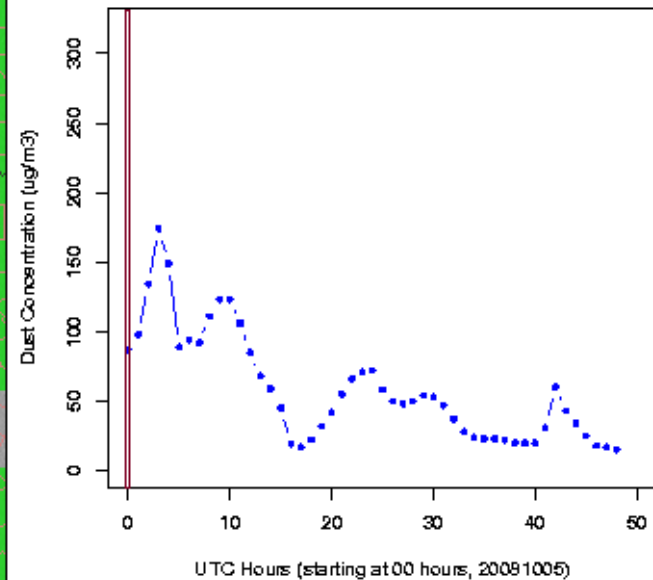
PHAIRS Dust Animation Client

49 hr Dust Model for User Selected Point (pm10) beginning on 10-05-2008 at 00:00:00 hours UTC



Date: 10/05/08 UTC Time: 00 hrs Particle Size Class: pm10

Dust Concentration Plot

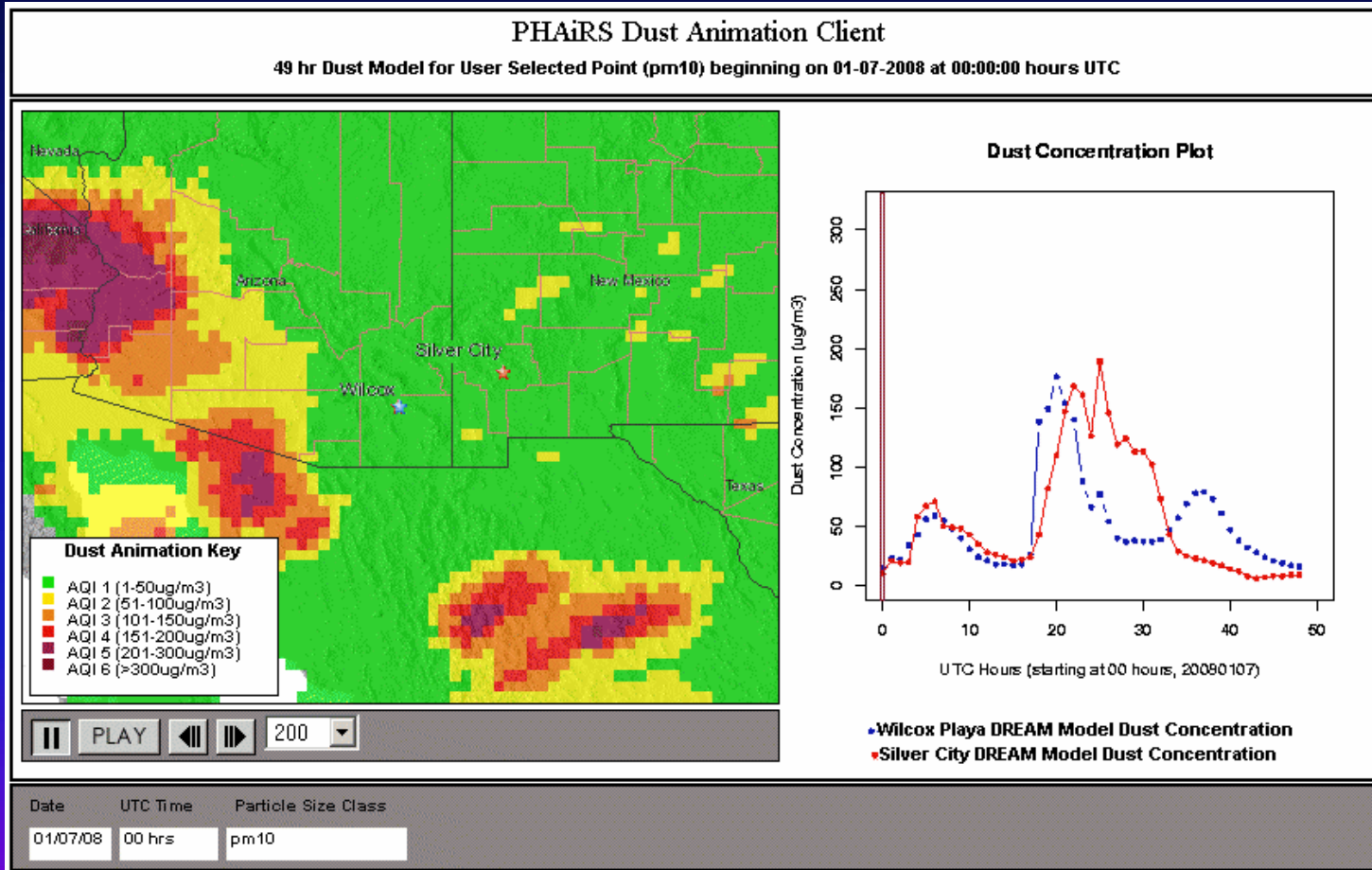


- DREAM Model Dust Concentration
- EPA AirNow Dust Concentration (when available)



Dust Storm of January 7, 2008

PM₁₀, Wilcox / Silver City





DREAM Data Access and Statistical Wizard

Data Access

Download EPA PM2.5 Data (returns all data for all sites within the DREAM domain area)

Begin Date (YYYYMMDD) End Date (YYYYMMDD)
 [Download PM2.5 File](#) [Clear Date Fields](#)

Download EPA PM2.5 Data for a Single Site Within the DREAM Domain Area

Begin Date (YYYYMMDD) End Date (YYYYMMDD) Station ID-Name
 4013401

Download EPA PM10 Data (returns all data for all sites within the DREAM domain area)

Begin Date (YYYYMMDD) End Date (YYYYMMDD)

Download EPA PM10 Data for a Single Site Within the DREAM Domain Area

Begin Date (YYYYMMDD) End Date (YYYYMMDD) Station ID-Name
 4013401

View a Table of Observed and Modelled Data for a Single Station

Date (MM-DD-YYYY) Time (HH:MM:SS)
 01-01-2006 00:00:00 UTC

View a Table of Observed and Modelled Data for a Single Station

Date (MM-DD-YYYY) Particle Size
 01-01-2006 PM 2.5

View a Table of Observed and Modelled Data for a Single Station Run

Date (MM-DD-YYYY) Station ID-Name
 01-01-2006 40134010-DYSART

View a Table of Observed and Modelled Data for a Single Station Run

Begin (MM-DD-YYYY) End (MM-DD-YYYY) Station ID-Name
 01-01-2006 01-01-2006 40134010-DYSART

Statistical Functions

Generate Statistics for a Single Station for a Single Run

Date (MM-DD-YYYY) Station ID-Name
 01-01-2006 40134010-DYSART

Generate Statistics for a Single Station for a Single Run

Begin (MM-DD-YYYY) End (MM-DD-YYYY) Station ID-Name
 01-01-2006 01-01-2006 40134010-DYSART

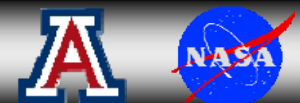
Table of Observed and Predicted (DREAM) PM25 Values for the 48-hour period beginning 04/15/2007 (Station No. 350011013 / North Valley)

To save as a CSV file, right click on the link below, select 'Save Link As', and then provide a new filename with a .csv extension in the dialog box

[Download CSV File](#)

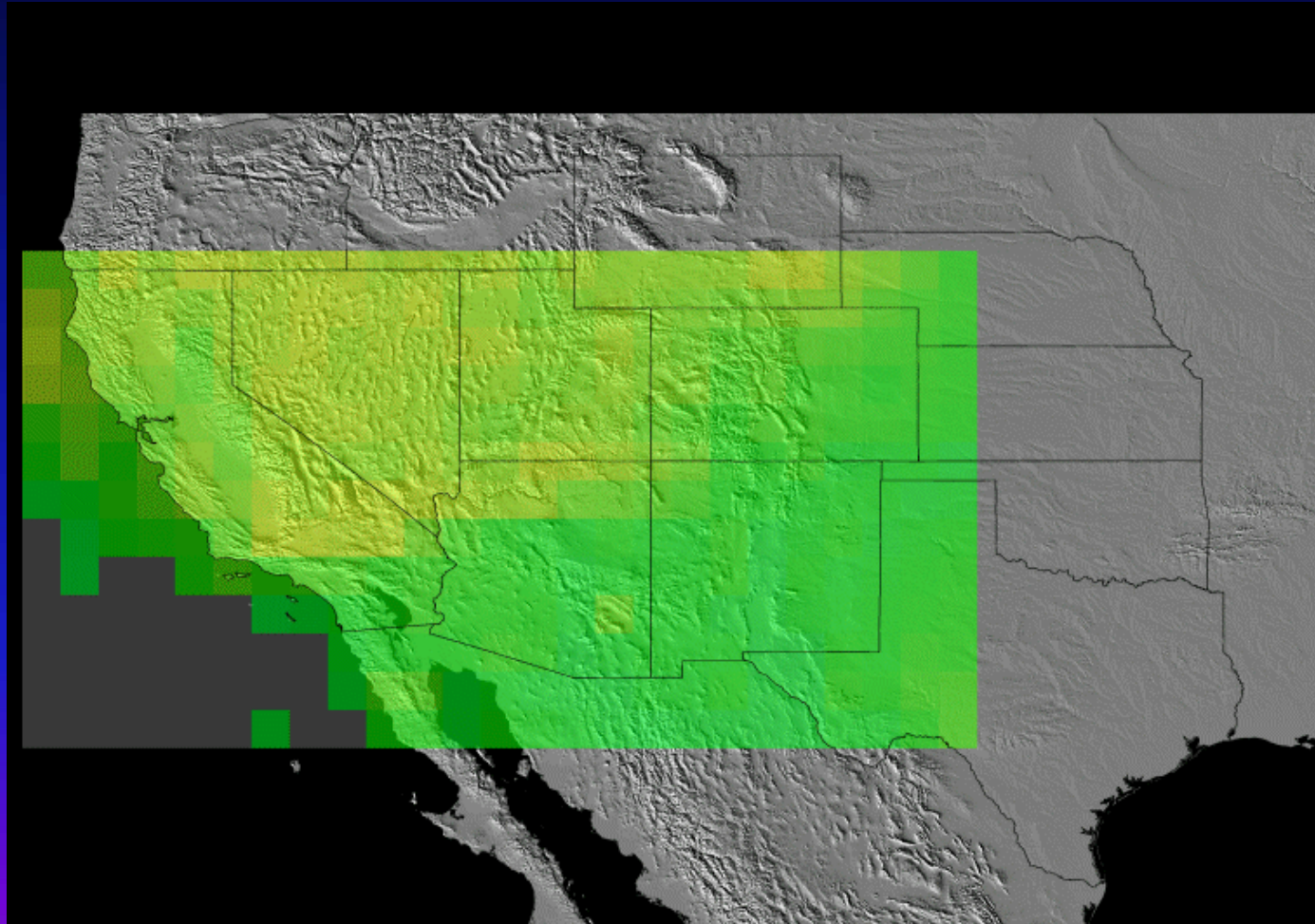
Station ID	Station Name	Latitude	Longitude	EPA Observed (ug/m3)	DREAM Model Value (ug/m3)	Datetime (YYYY-MM-DD"TT"HH:00:00)
350011013	North Valley	35.1878	-106.604	9.0	1.0075000279	2007-04-15T00:00:00
350011013	North Valley	35.1878	-106.604	7.0	0.9468014626	2007-04-15T01:00:00
350011013	North Valley	35.1878	-106.604	8.0	0.9998162003	2007-04-15T02:00:00
350011013	North Valley	35.1878	-106.604	10.0	1.063272094	2007-04-15T03:00:00
350011013	North Valley	35.1878	-106.604	10.0	1.1059926713	2007-04-15T04:00:00
350011013	North Valley	35.1878	-106.604	10.0	1.1227573542	2007-04-15T05:00:00
350011013	North Valley	35.1878	-106.604	9.0	1.1235294097	2007-04-15T06:00:00
350011013	North Valley	35.1878	-106.604	8.0	1.14150731	2007-04-15T07:00:00
350011013	North Valley	35.1878	-106.604	7.0	1.2136764386	2007-04-15T08:00:00
350011013	North Valley	35.1878	-106.604	7.0	1.3928309083	2007-04-15T09:00:00
350011013	North Valley	35.1878	-106.604	7.0	1.6509559225	2007-04-15T10:00:00
350011013	North Valley	35.1878	-106.604	8.0	1.9005882389	2007-04-15T11:00:00
350011013	North Valley	35.1878	-106.604	9.0	2.1024263957	2007-04-15T12:00:00
350011013	North Valley	35.1878	-106.604	8.0	2.2592646234	2007-04-15T13:00:00
350011013	North Valley	35.1878	-106.604	7.0	2.2293381831	2007-04-15T14:00:00
350011013	North Valley	35.1878	-106.604	8.0	2.0158823799	2007-04-15T15:00:00
350011013	North Valley	35.1878	-106.604	8.0	1.9149264869	2007-04-15T16:00:00
350011013	North Valley	35.1878	-106.604	7.0	4.448529552	2007-04-15T17:00:00
350011013	North Valley	35.1878	-106.604	6.0	6.8639706163	2007-04-15T18:00:00
350011013	North Valley	35.1878	-106.604	6.0	12.3272054336	2007-04-15T19:00:00
350011013	North Valley	35.1878	-106.604	6.0	20.8937504712	2007-04-15T20:00:00
350011013	North Valley	35.1878	-106.604	2.0	27.4044121013	2007-04-15T21:00:00
350011013	North Valley	35.1878	-106.604	4.0	30.1459564882	2007-04-15T22:00:00
350011013	North Valley	35.19	-106.6	missing	30.1911774804	2007-04-15T23:00:00
350011013	North Valley	35.1878	-106.604	6.0	31.2290444094	2007-04-16T00:00:00
350011013	North Valley	35.1878	-106.604	7.0	32.4169130886	2007-04-16T01:00:00
350011013	North Valley	35.1878	-106.604	8.0	30.877940795	2007-04-16T02:00:00
350011013	North Valley	35.1878	-106.604	7.0	29.4794110691	2007-04-16T03:00:00
350011013	North Valley	35.1878	-106.604	6.0	28.7514714634	2007-04-16T04:00:00

Data Access & Statistics



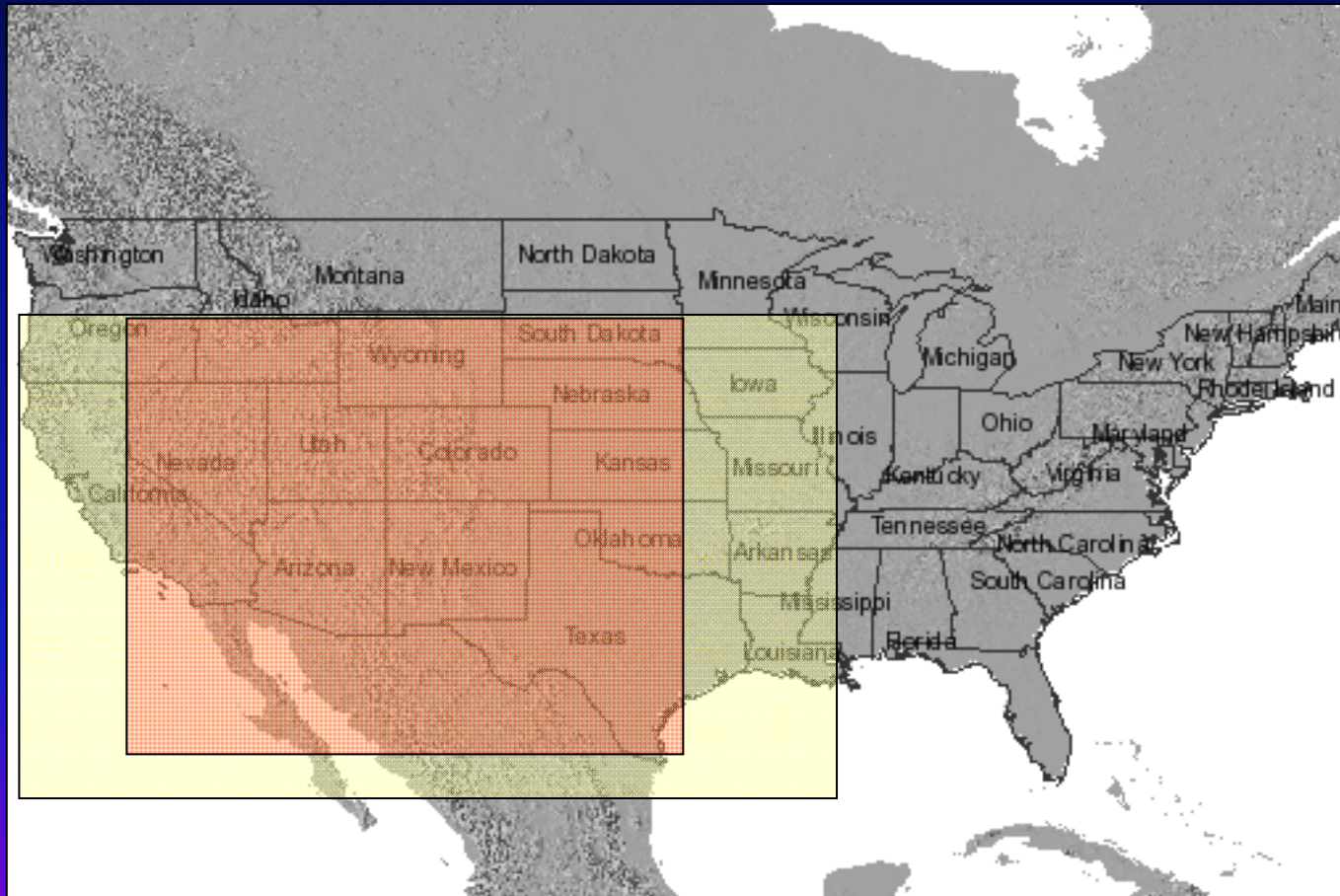


Ozone Patterns As Measured by NASA/TOMS for Southwest USA



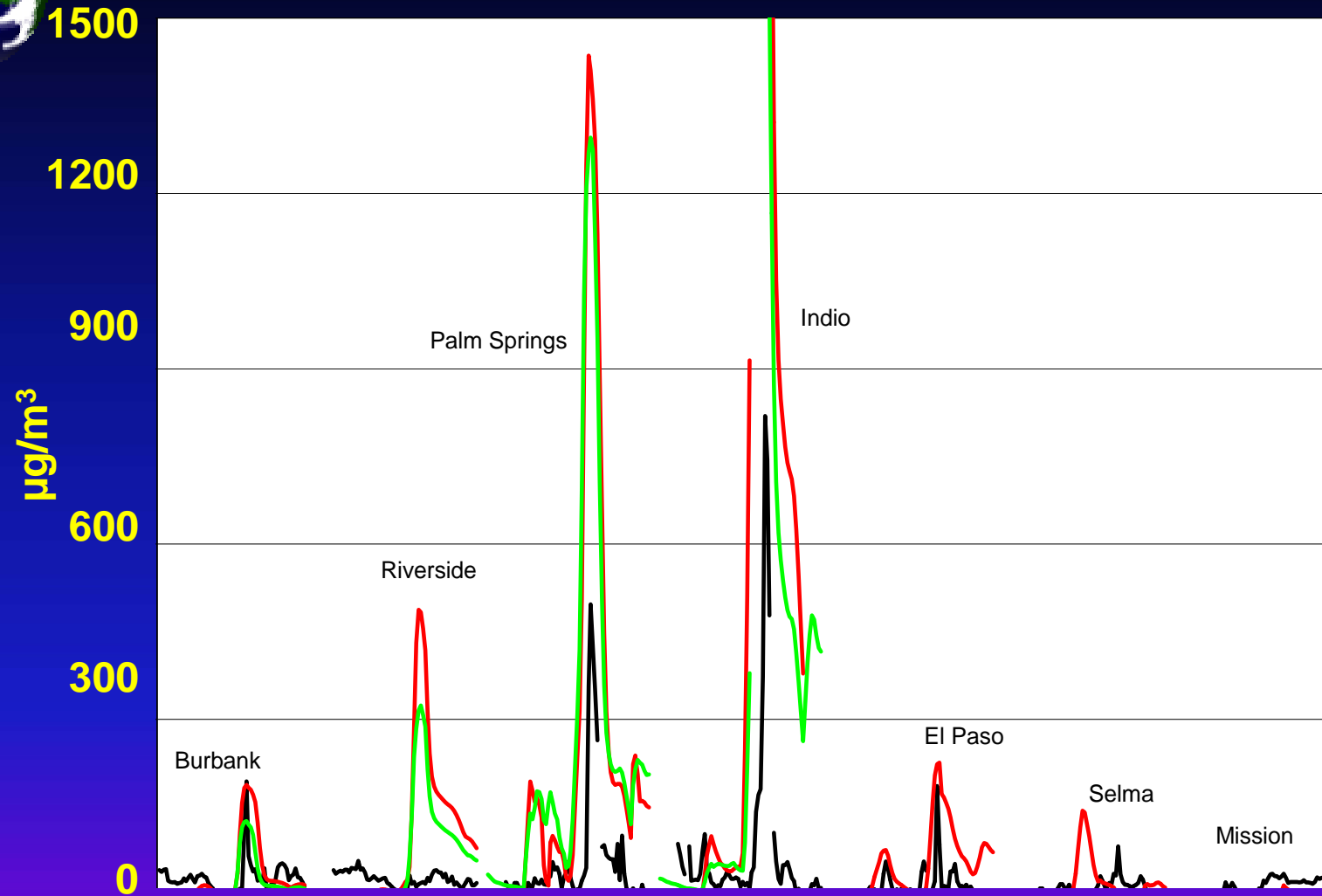


PHAIRS Modeling Domain & DREAM Dust Forecast Domain

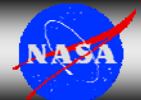




Dust Storm of January 4-6, 2007

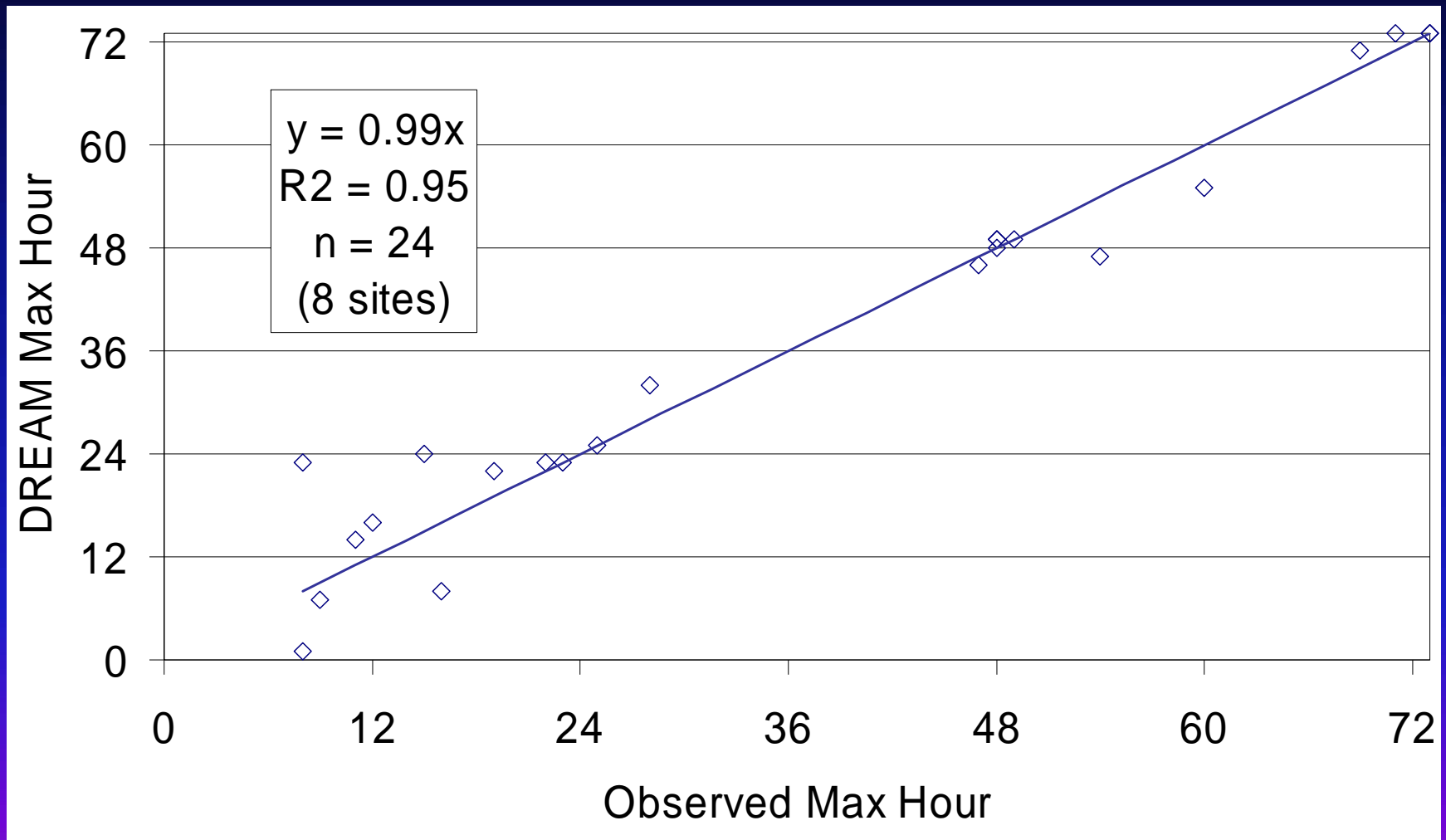


Black = PM₁₀ observed (AIRNow data); Red=PM₁₀ (ED/eta Run 15a); Green=PM₁₀ (ED/eta Run 20a)



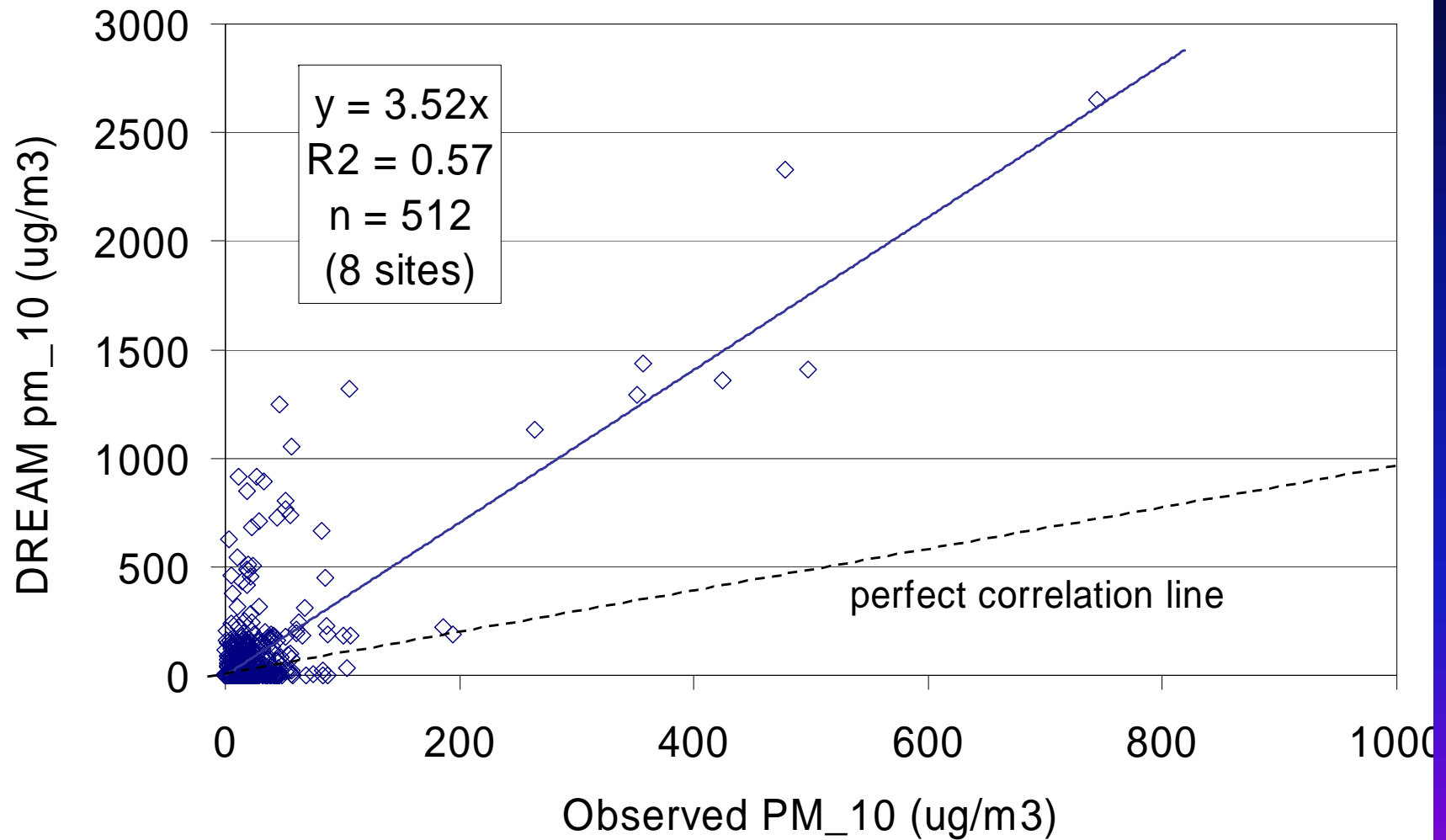


Peak-hour Correlation - Jan 4-6, 2007





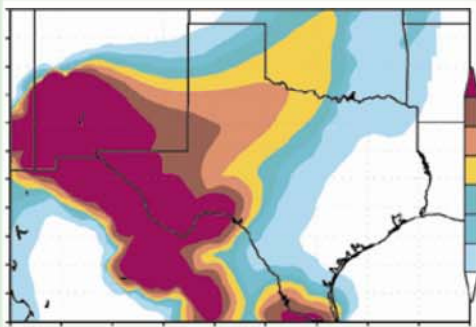
Magnitude Correlation - Jan 4-6, 2007





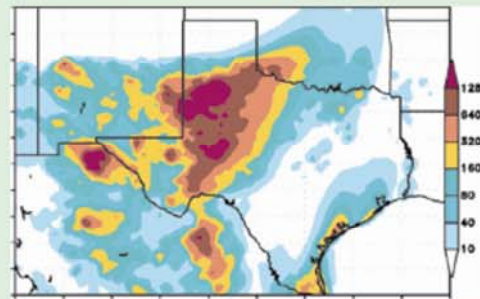
Incremental Improvements to Model Performance

Baseline Model Performance



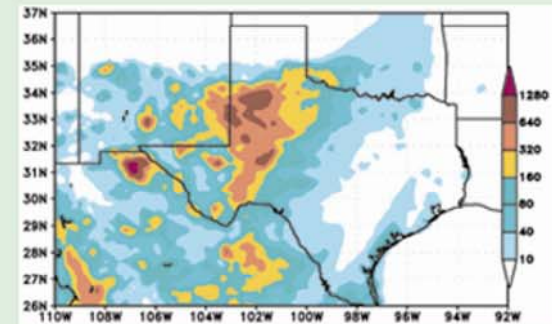
University of Malta
University of New Mexico
University of Arizona

Model Performance After
Assimilating Earth Observation Data



NASA / University of New Mexico
University of Arizona
World Meteorological Organization

Model Performance Using
NCEP/NMM Weather Forecast Model



NASA / University of New Mexico
University of Arizona
World Meteorological Organization



Contact Information

Stan Morain: 505-277-3622 x 228; smorain@edac.unm.edu

Amy Budge: 505-277-3622 x 231; abudge@edac.unm.edu

<http://phairs.unm.edu>

