Correlations Between $PM_{2.5}$ Mass, Aerosol Constituents (EC and SO_4^{2-}), and Their Precursors for Different Averaging Times—Source Impact Indicator?

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Table 1. TVA Supersite Sampling Periods for 1999-2000

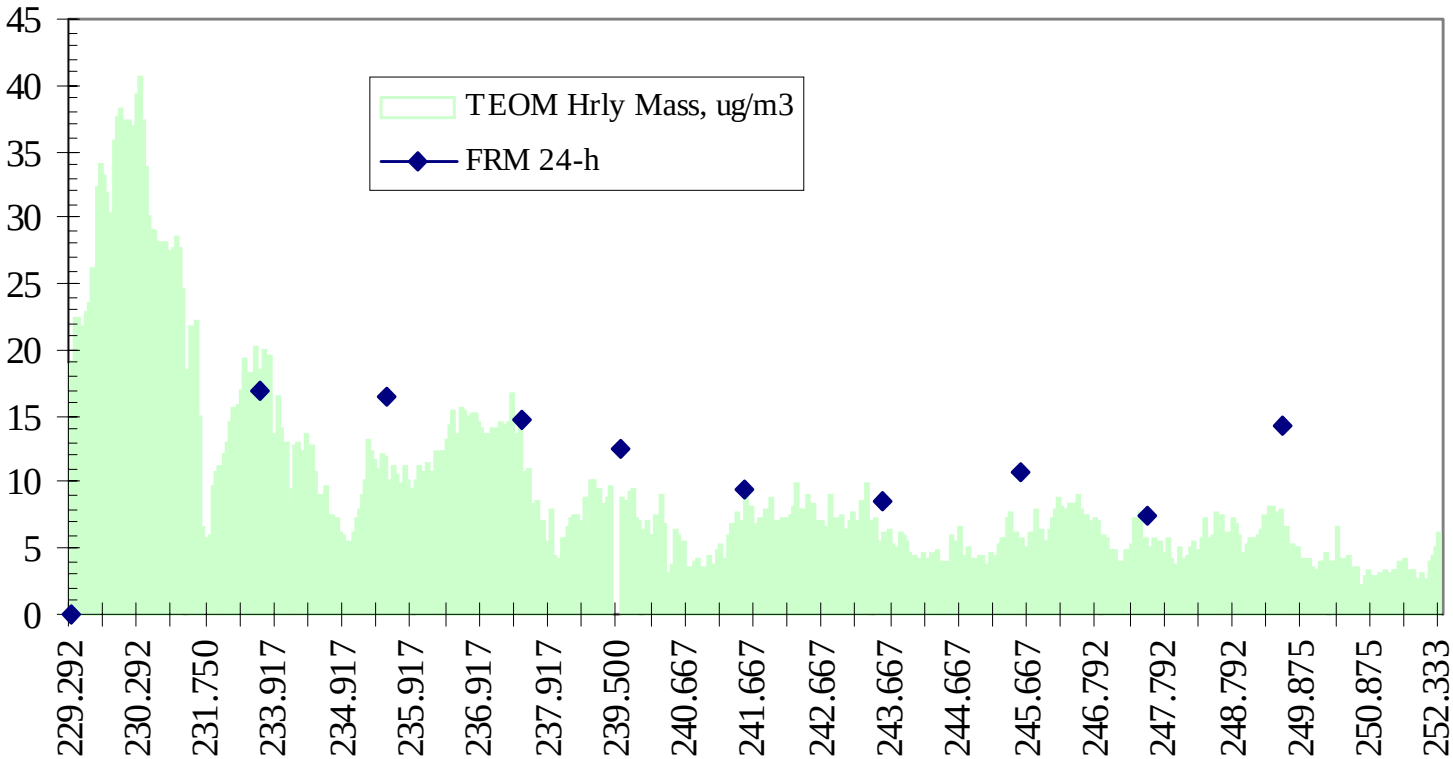
Sampled Species	Sampling Method	Time Resolution
Sampling Period: *Fall, October 12-26, 1999*		
Mass, Composition	FRM-Teflon	24 h
Composition incl. OC/EC	FRM-Quartz	24 h
Mass and Composition incl. SVOC	PC-BOSS (Original Design)	12 h, 24 h
Ozone	UV Absorption	5 min ave
$NO/NO_2/NO_y$	Chemiluminescence	5 min ave
SO2	Pulsed Fluorescence	5 min ave
CO	NDIR	5 min ave
Continuous mass	R&P TEOM (dryer A)	5 min ave
Wind speed/direction, T, RH, Solar Rad	Standard met package	5 min ave
Sampling Period: *Spring, Apr. 24-May 12, 2000* ***(Additions or Modifications Only)***		
Mass and Composition incl.. SVOC	PC-BOSS (Modified Design)	12 h, 24 h
SO2	High-sensitivity Pulsed Fluorescence	5 min ave
^{14}C of Organic aerosols	PM10 HiVol	24 h

Table 1. TVA Supersite Sampling Periods for 1999-2000 (cont'd.)

Sampling Period: *Summer, Aug. 16-Sept. 9, 2000* ***(Additions or Modifications Only)***		
Particle size distributions	ORNL SMDS*	30 min
^{14}C of Organic aerosols	TSP HiVol	24 h
Sampling Period: *Summer, June 30-Aug . 14, 2001* ***(Additions or Modifications Only)***		
Particle size distributions	ORNL SMDS (upgrade)*	30 min
^{14}C of Organic aerosols	PM10 HiVol	24 h
Elemental (black) carbon	Aethalometer	5 min ave
Continuous mass	R&P TEOM (dryer B)	5 min ave
Continuous sulfate	Harvard/TVA	10 min ave
Continuous sulfate	R&P 8400S	sample/10 min

* Data obtained by M.-D. Cheng of Oak Ridge National Laboratory.

Figure 2. Comparison of TEOM and FRM Fine Mass
Look Rock, Summer , 2000



24-Hr Average TEOM Mass vs. FRM Mass

Look Rock, July-Aug, 2001

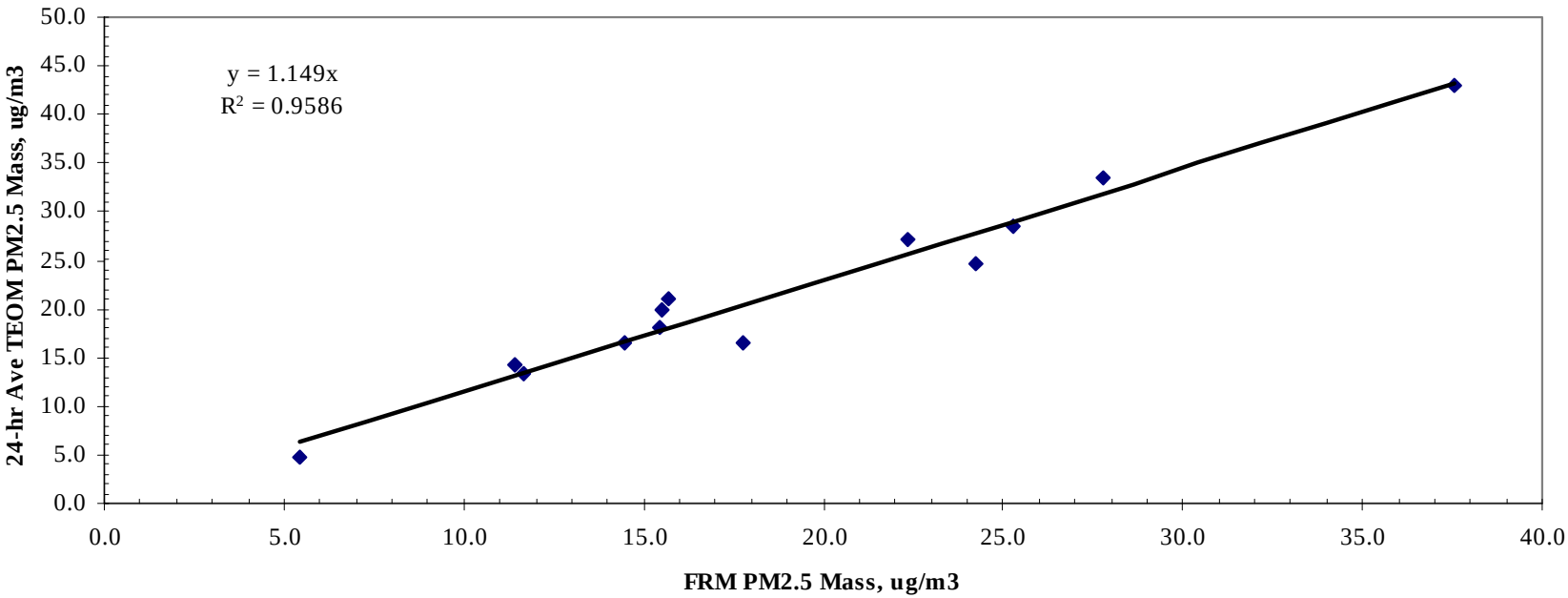
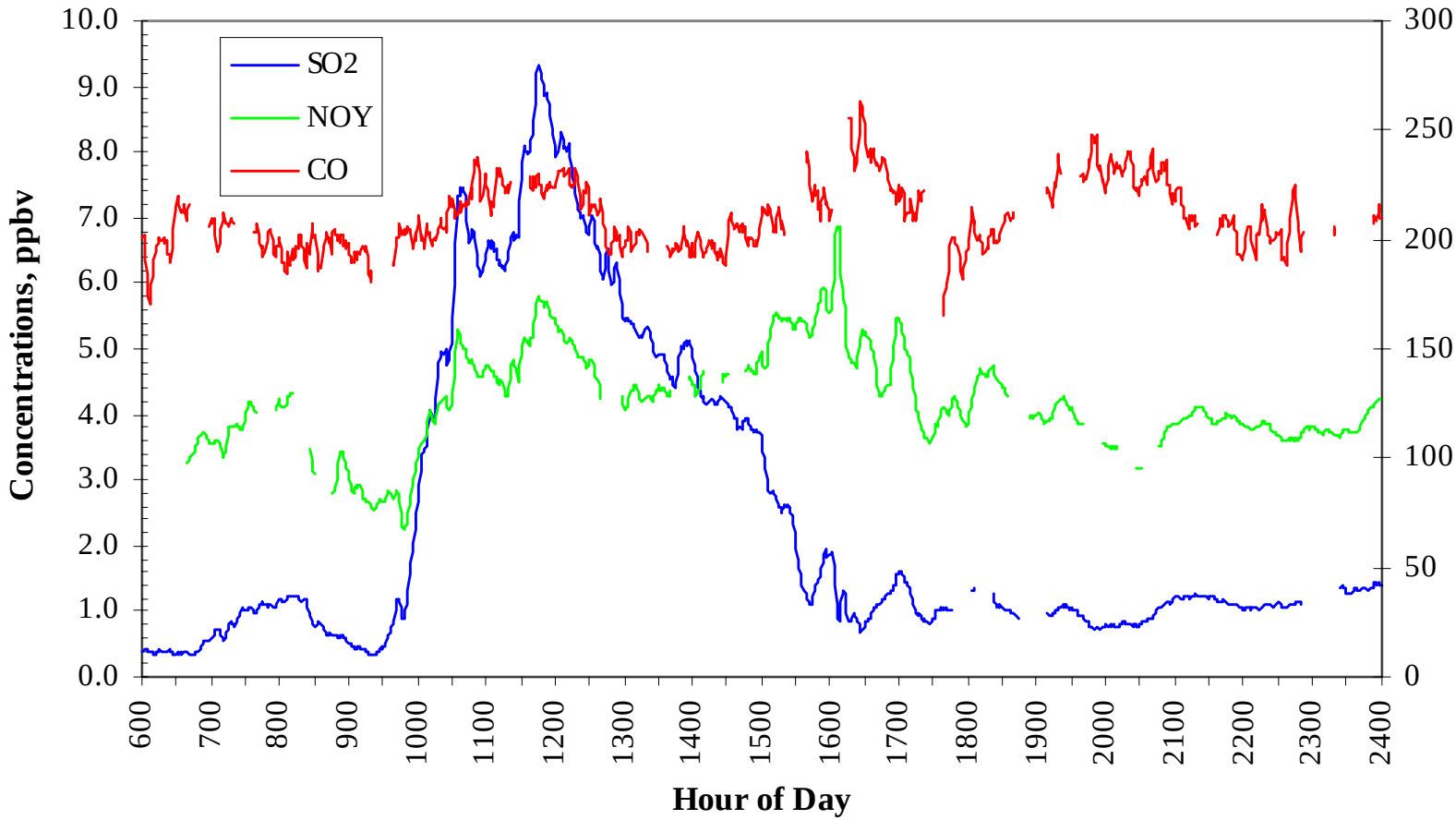
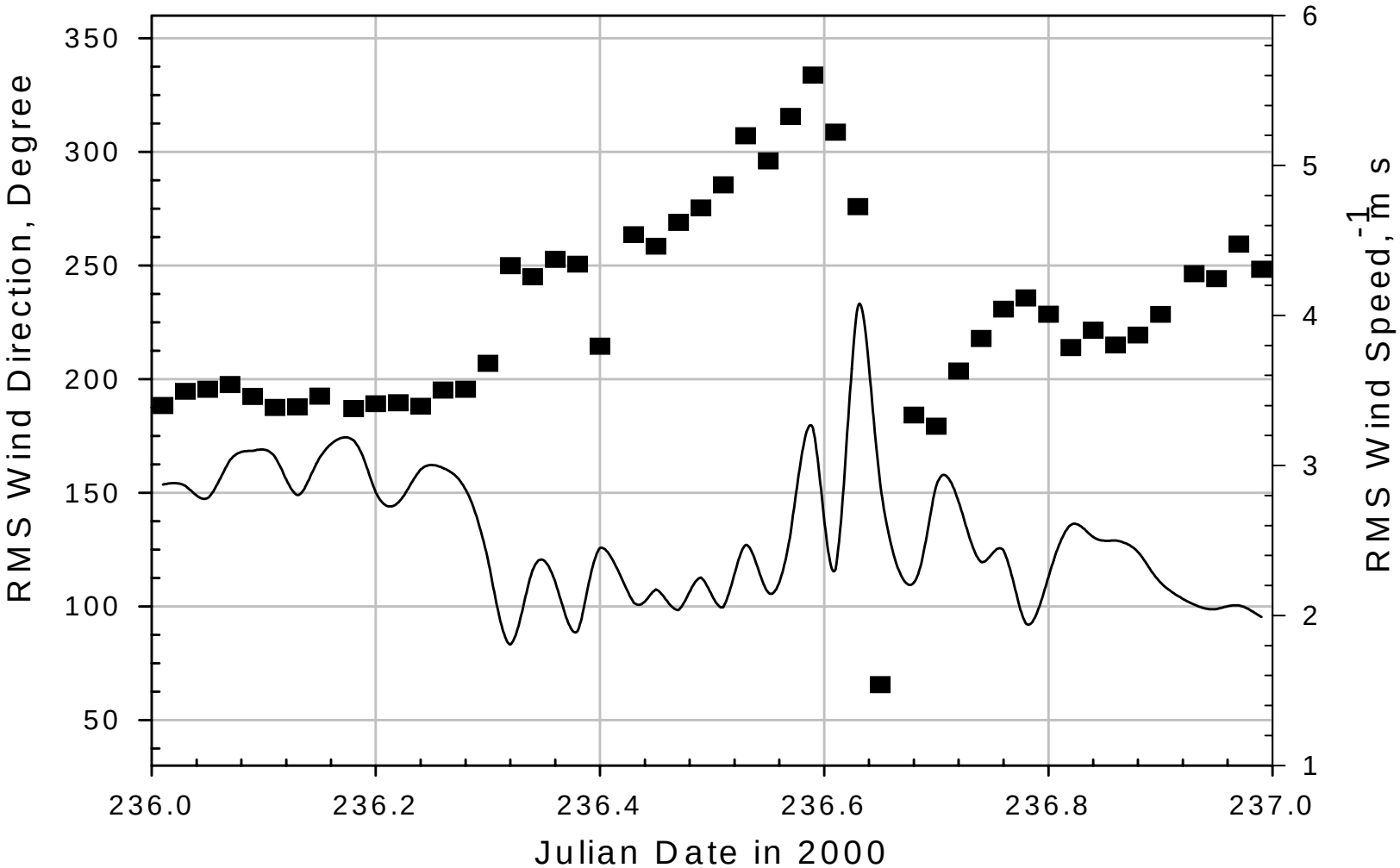


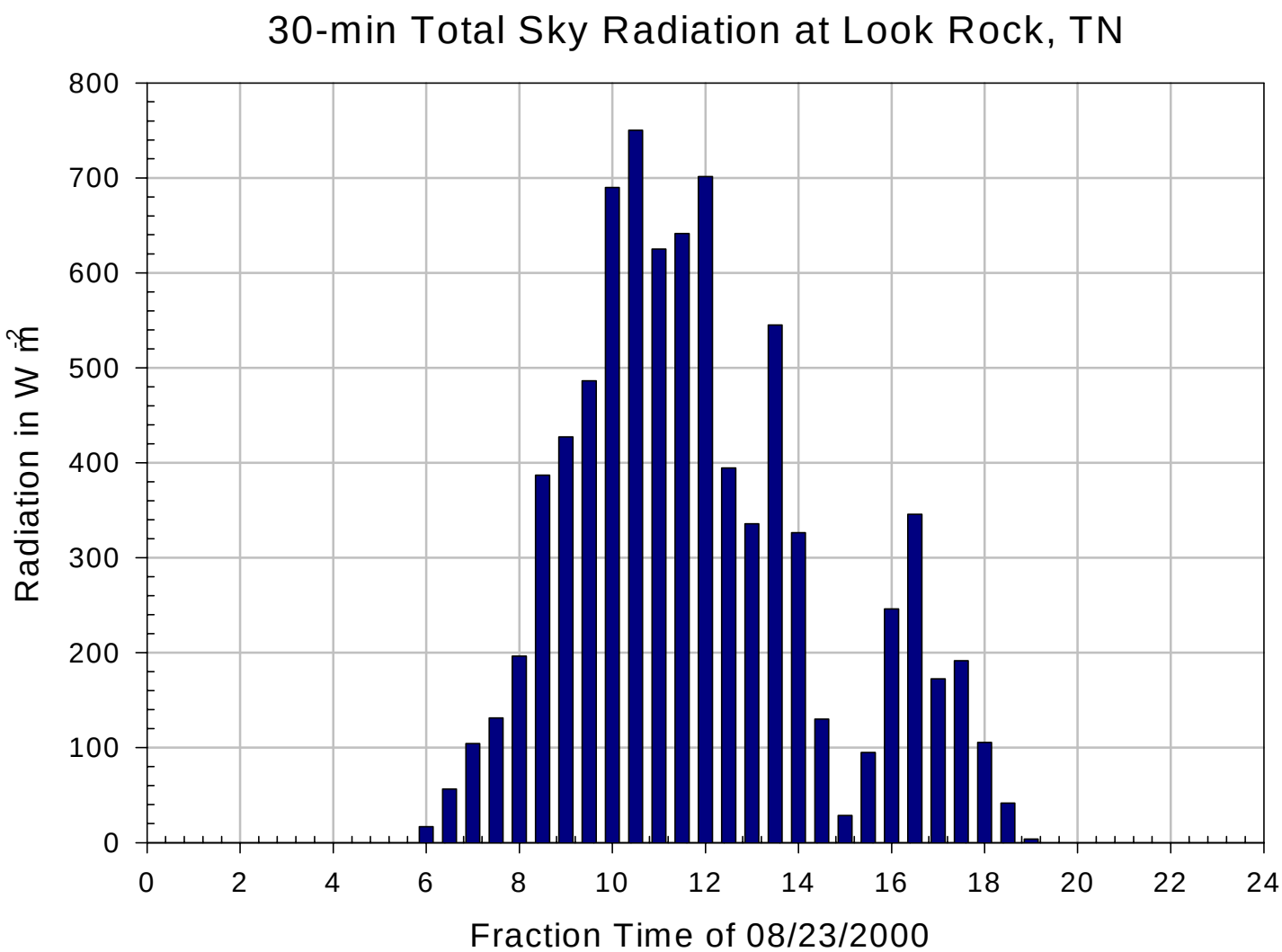
Figure 3. Gaseous Data from Look Rock
August 23, 2000



Wind Speed and Direction at Look Rock

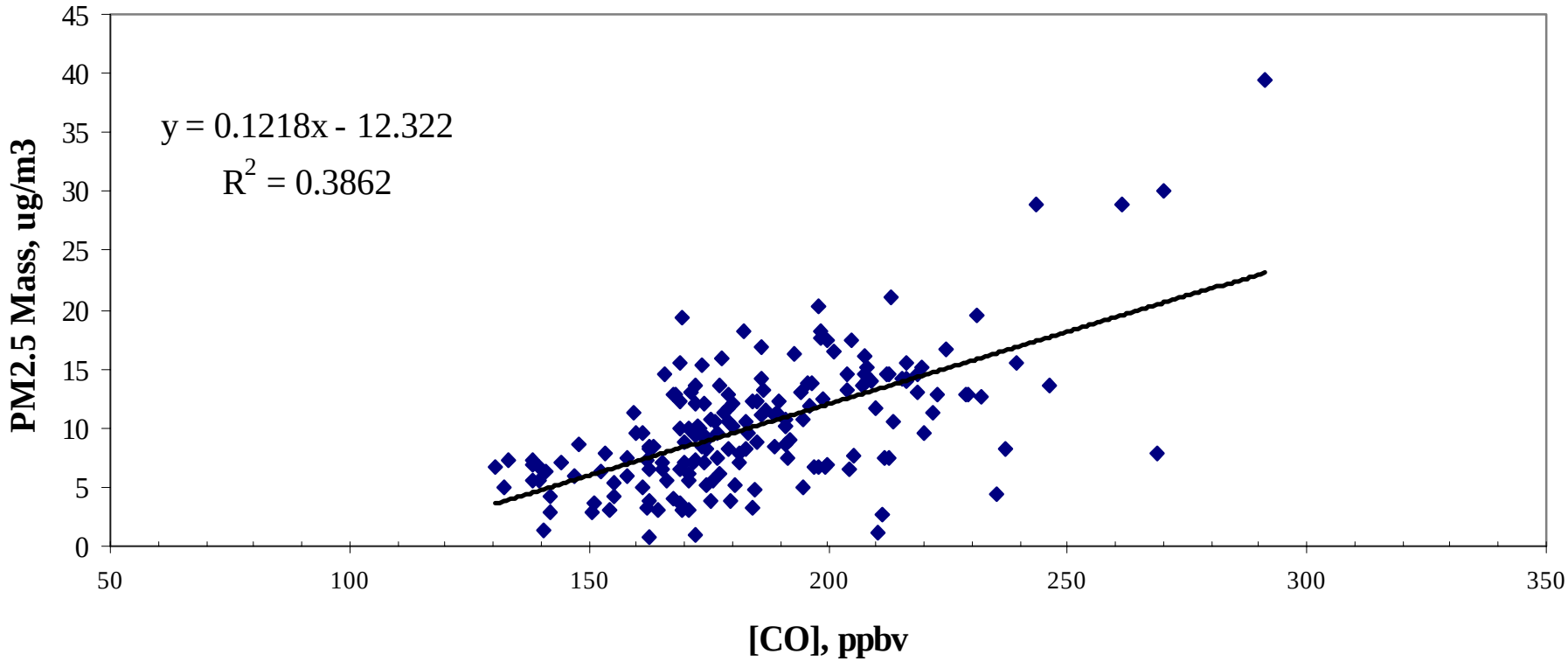
August 23, 2000




30-min Total Sky Radiation at Look Rock, TN
Radiation in W m-2
800
700
600
500
400
300
200
100
0
0
2
4
6
8
10
12
14
16
18
20
22
24
Fraction Time of 08/23/2000

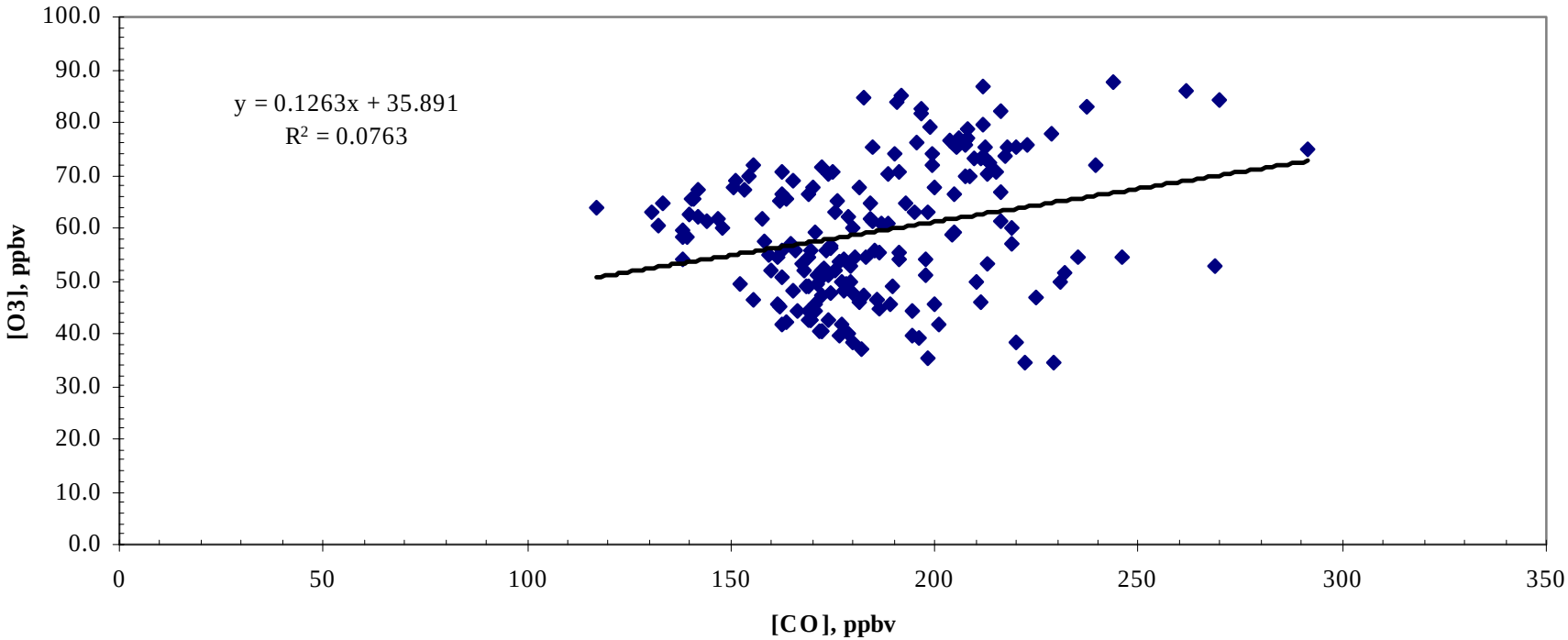
Hourly Averages TEOM Fine Mass vs. CO

Look Rock, Aug-Sept, 2000



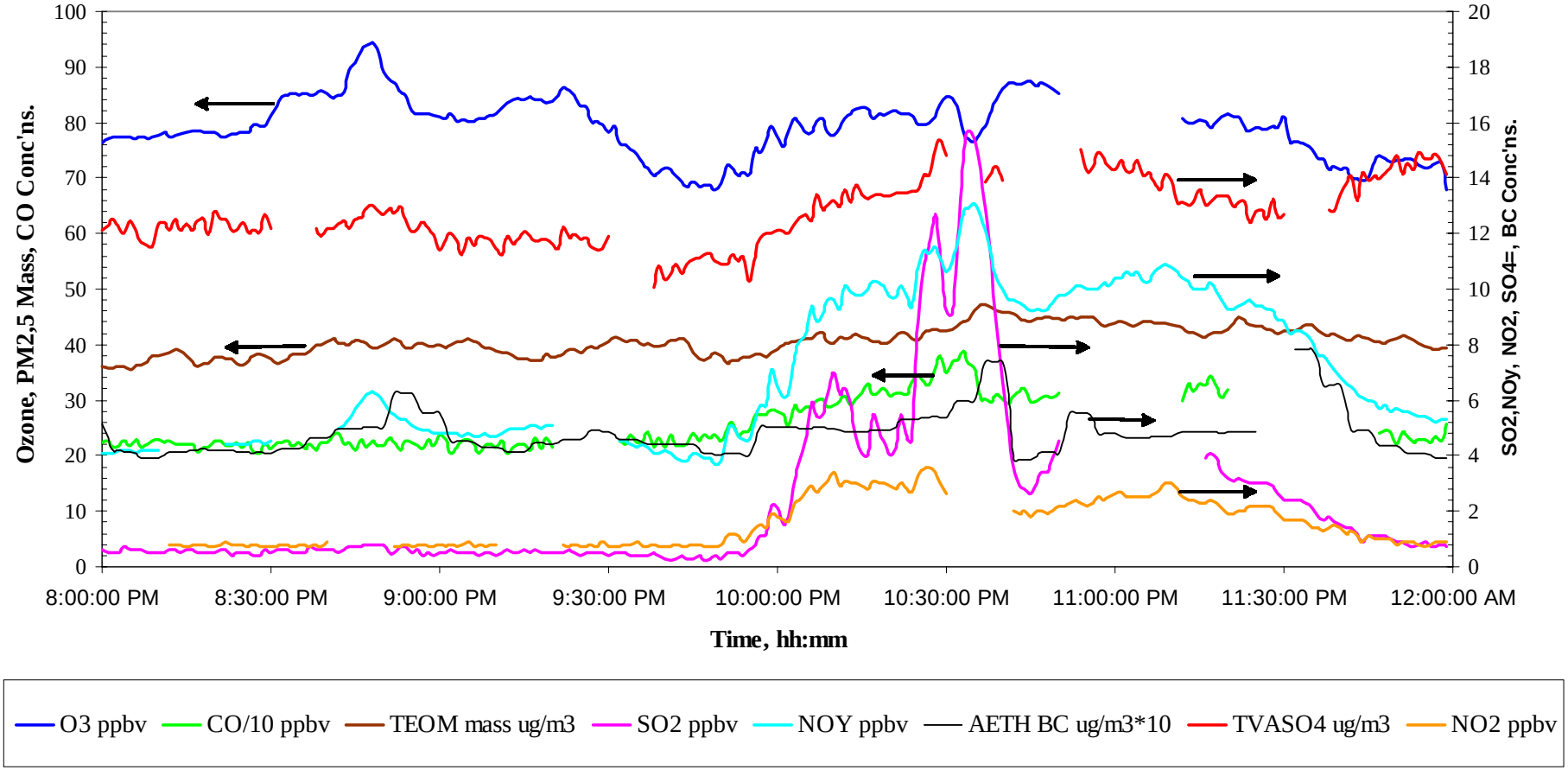
Hourly Ozone vs. CO

Look Rock, August, 2000

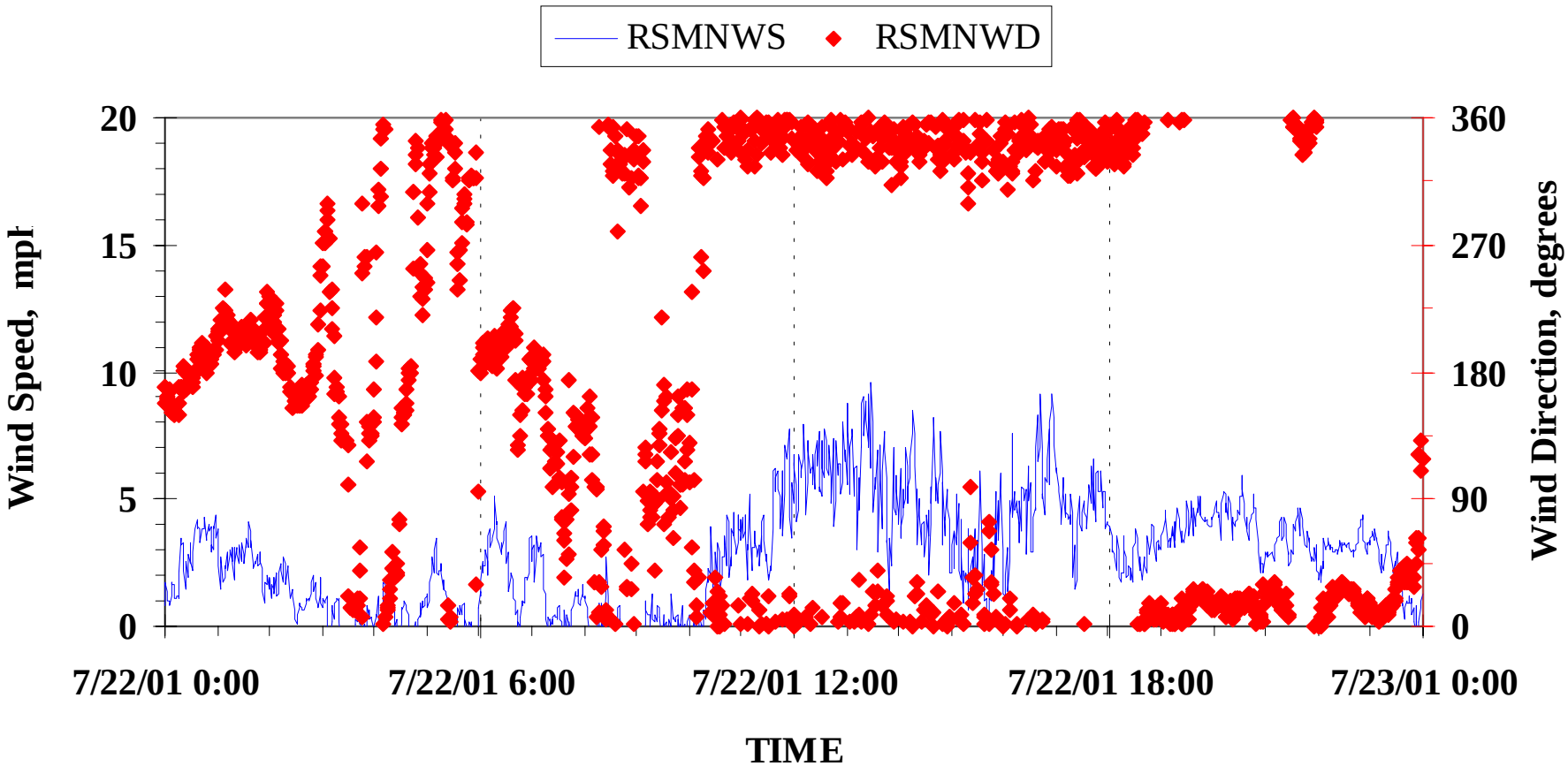


Continuous Gas and Particle Data

Look Rock, 2000-2400 hr, 7/22/01

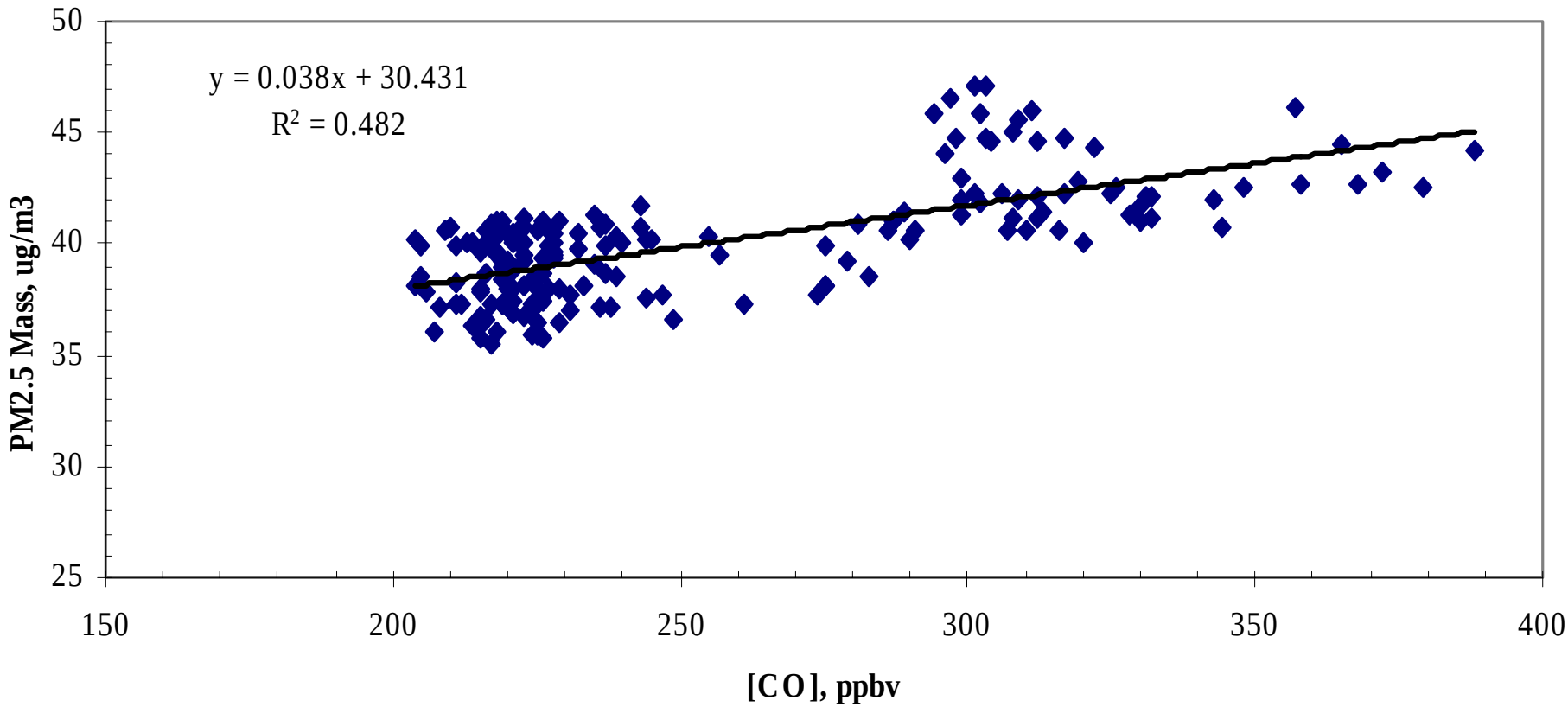


LOOK ROCK 2001



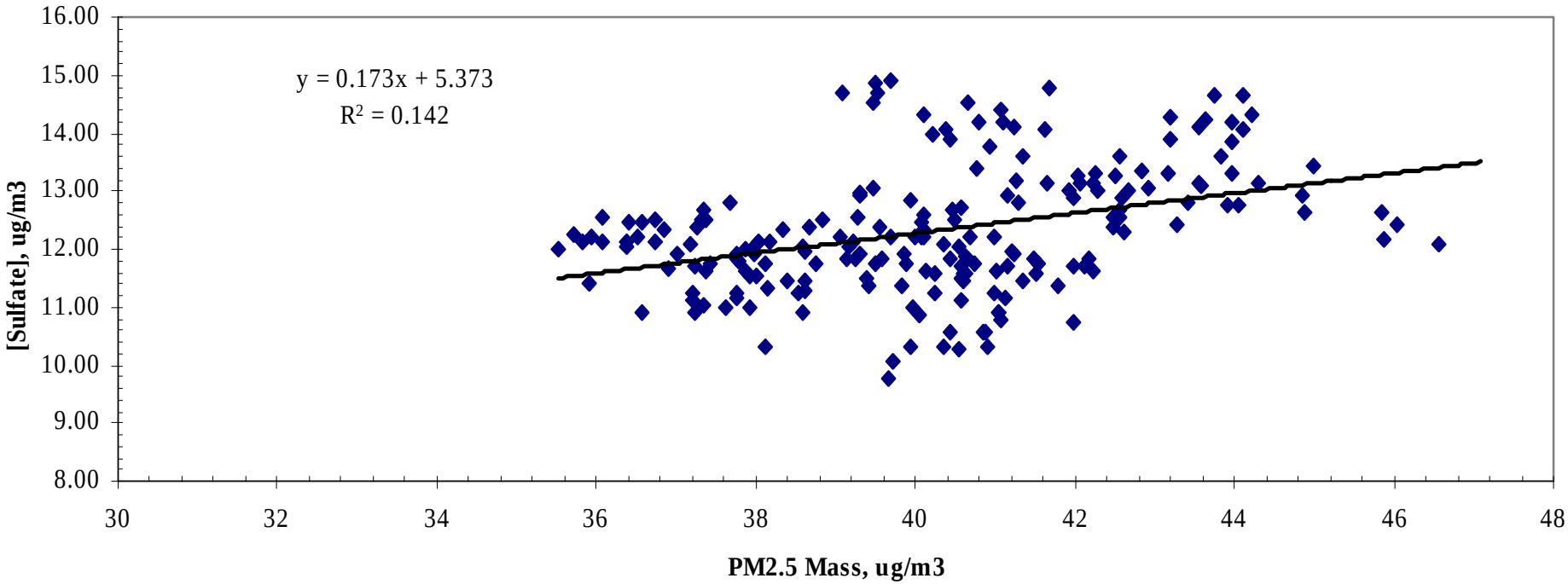
TEOM PM2.5 Mass vs. CO

Look Rock, 2000-2400 hr, 7/22/01



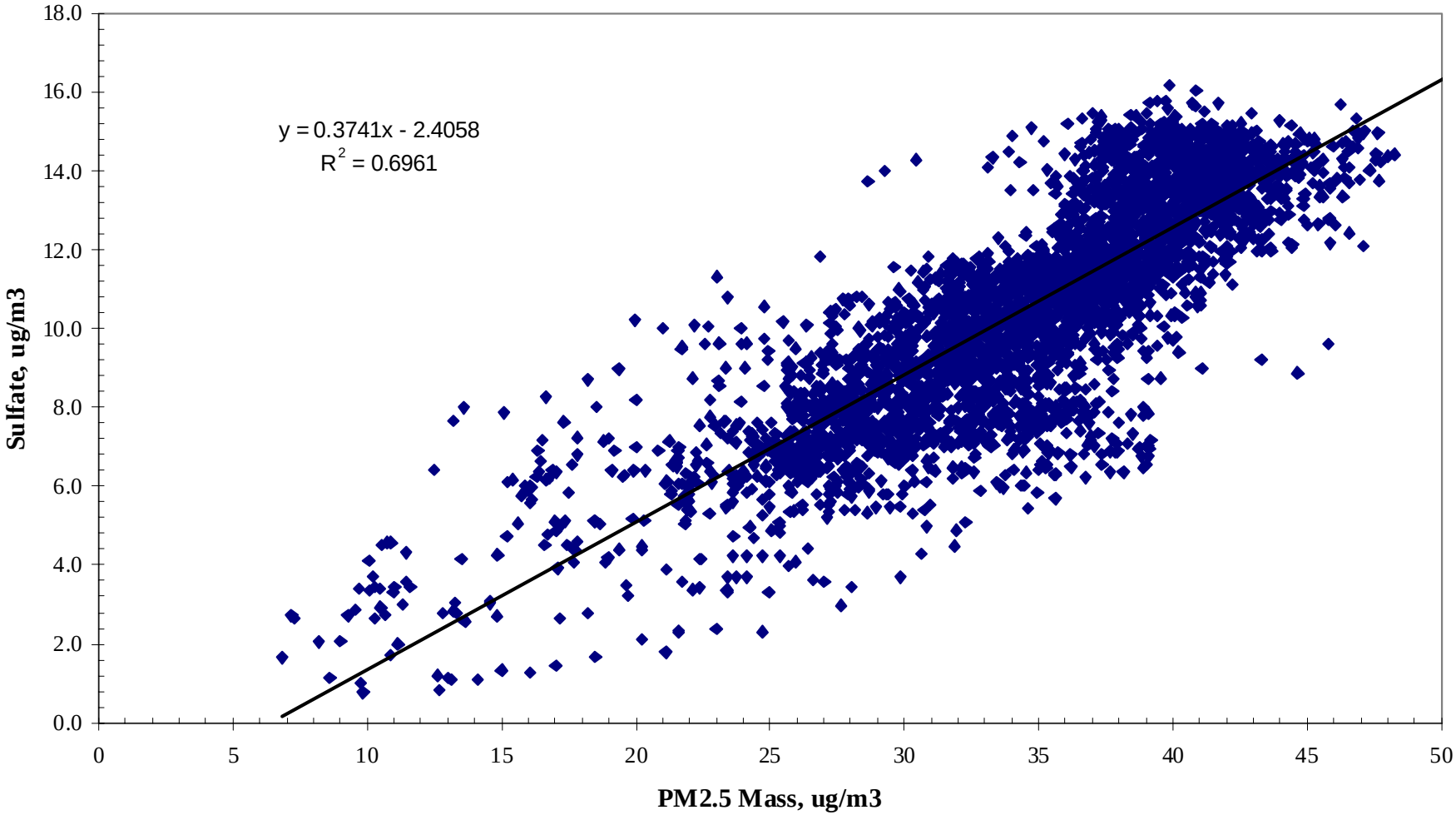
HPSH/TVA SO4 vs TEOM PM2.5 Mass

Look Rock 2000-2400 hr, 7/23/01



HSPH/TVA SO4 vs. TEOM Fine Mass

5-Min Ave, Look Rock, 7/21-23/01 (Preliminary)



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