



Bay Area Modeling Advisory Committee Meeting

January 19, 2005

Phil Martien, Ph.D.

Jun Chen

Saffet Tanrikulu, Ph.D.



Update: Meteorological Evaluation

- To support the Northern California Agency 8-hour SIP & Transport Study
- Evaluate candidate meteorological-field inputs for “place-holder” photochemical modeling
- 8-hour ozone episodes are the focus:
 - July 9 – 12, 1999
 - July 29 – August 2, 2000
- Create an analysis tool for evaluating meteorological-model performance and for sharing and distributing the findings



Candidate Meteorological Fields

- 1999: MM5 with FDDA, 5-layer soil model
 - MRF Mixing Scheme
 - Eta Mixing Scheme
 - 2000: MM5 with Eta Mixing Scheme
 - no FDDA, 5-layer Soil Model
 - FDDA, Land Surface Model
- CALMET**
- “hybrid” of MM5 and observation-based diagnostic fields



Statistical & Graphical Analyses

- Tabulated, Surface-Level Observations
- Station Time-Series Plots
 - Wind speed, direction
 - Temperature
 - Ozone
- Hourly, Spatial Plots
 - Wind vector plots: predicted & observed, differences
 - Temperature plots: observed, differences
- Daily Summary & Statistical Plots
 - Wind error & bias plots
 - Wind difference scatter plots
 - Temperature scatter plots, observed vs. predicted



Web-based Analysis Products

Bookmarks Location: <http://gate1.baaqmd.gov/ccaqs/1999/> What's Related

CCOS 1999

CCOS 1999 Surface Meteorology

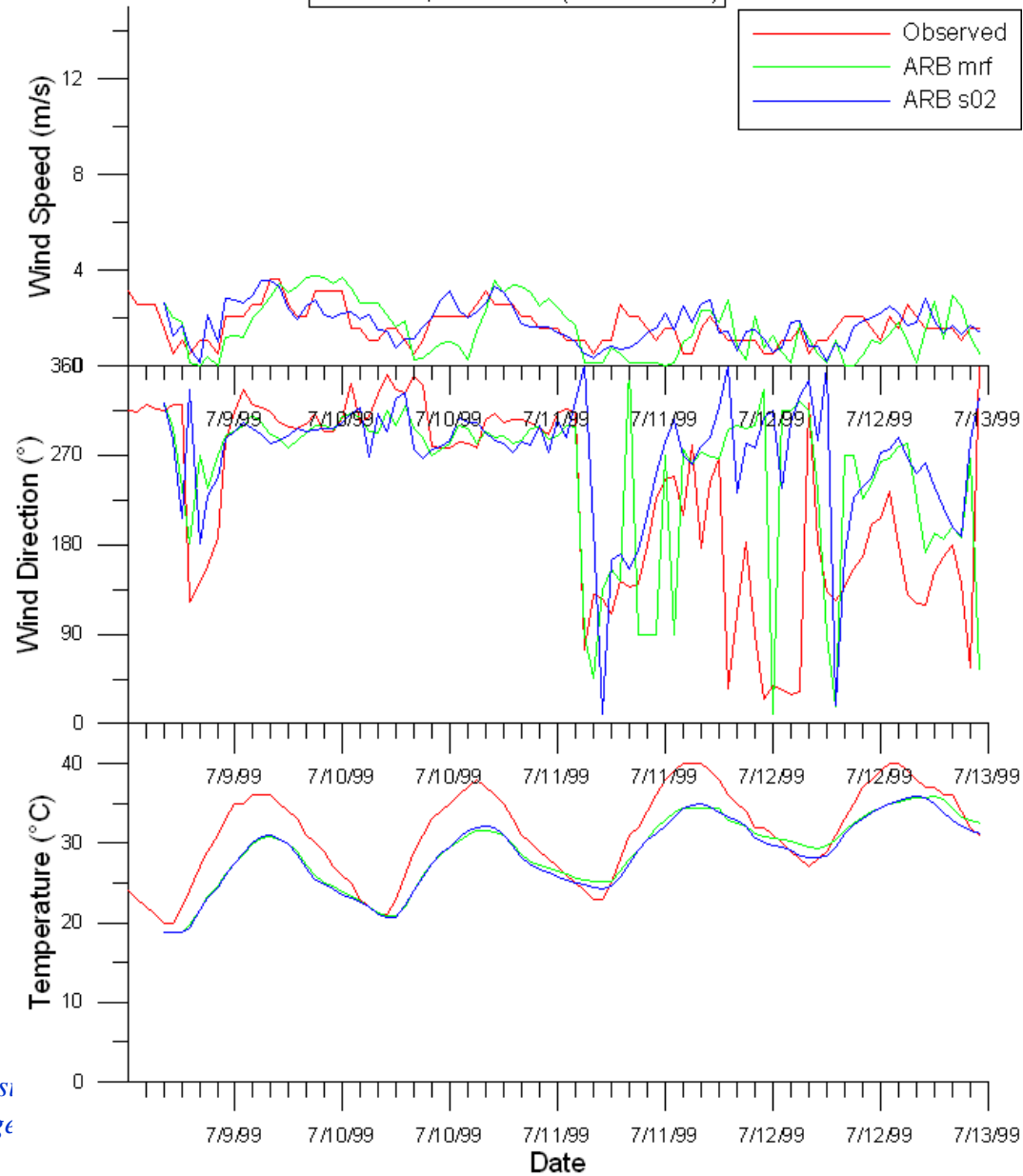
Station List: [Data](#) [Hourly Spatial Plots](#) [Summary Plots](#) [Ozone Time-series Plots](#)

SID	Agency	Station Name
AND	AIRS	Anderson Springs Stn
ARB	AIRS	Arbuckle Stn (Hillgate Rd 2W)
ARV	AIRS	Arvin Stn
ATL	AIRS	Atascadero Stn (Lewis Ave.)
BAC	AIRS	Bakersfield Stn (5558 California Ave)
BGS	AIRS	Bakersfield Stn (1128 Golden State)
BRBK	AIRS	BURBANK-228 W. Palm Ave
BSW	AIRS	Barstow Stn
CA1	AIRS	Capitan Stn/Las Flores Canyon #1
CHM	AIRS	Chico Stn (Manzanita)
		Coso Junction Stn



Fresno, 1st Street, 1999

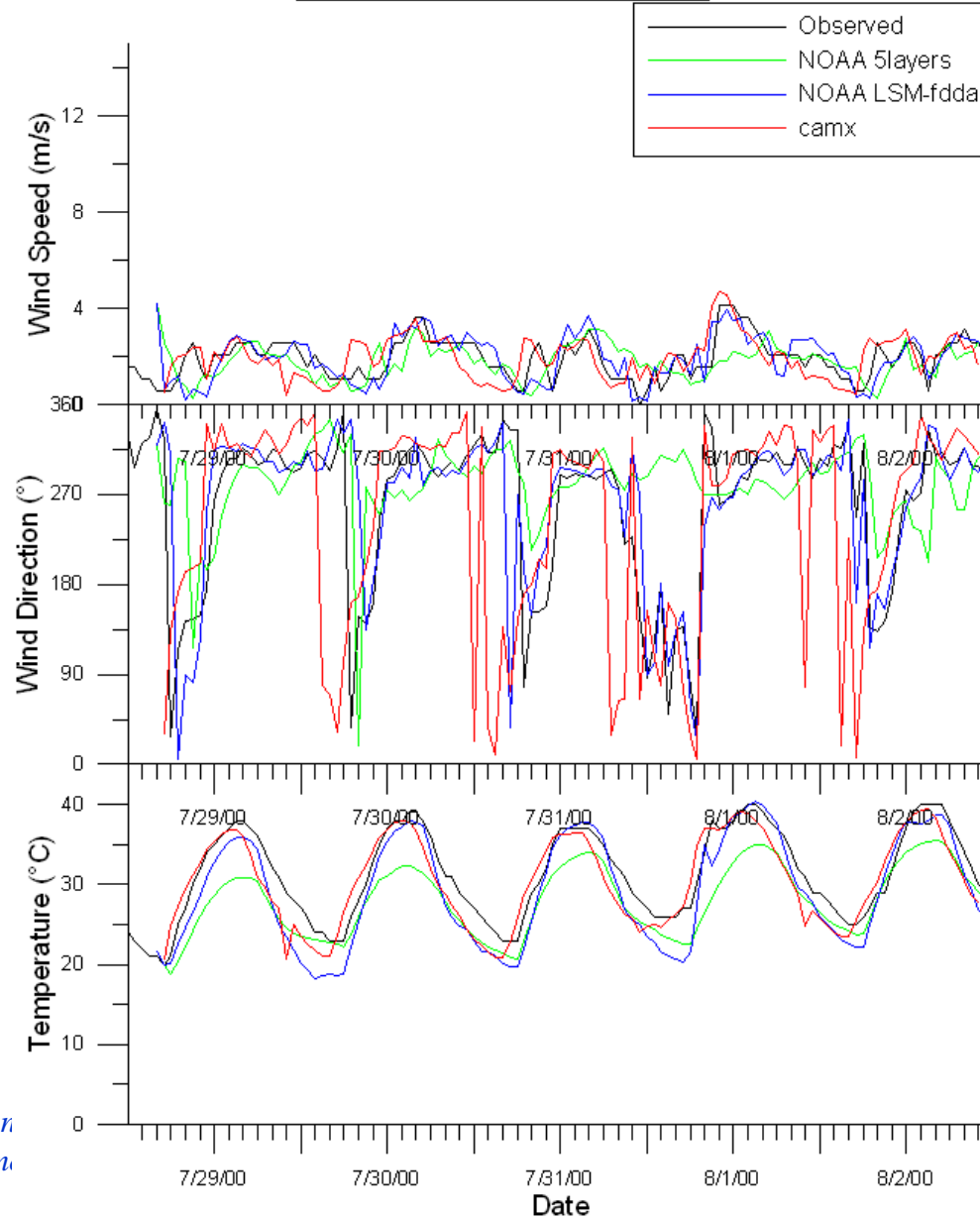
AIRS: FSF, Fresno Stn (3425 First St.)





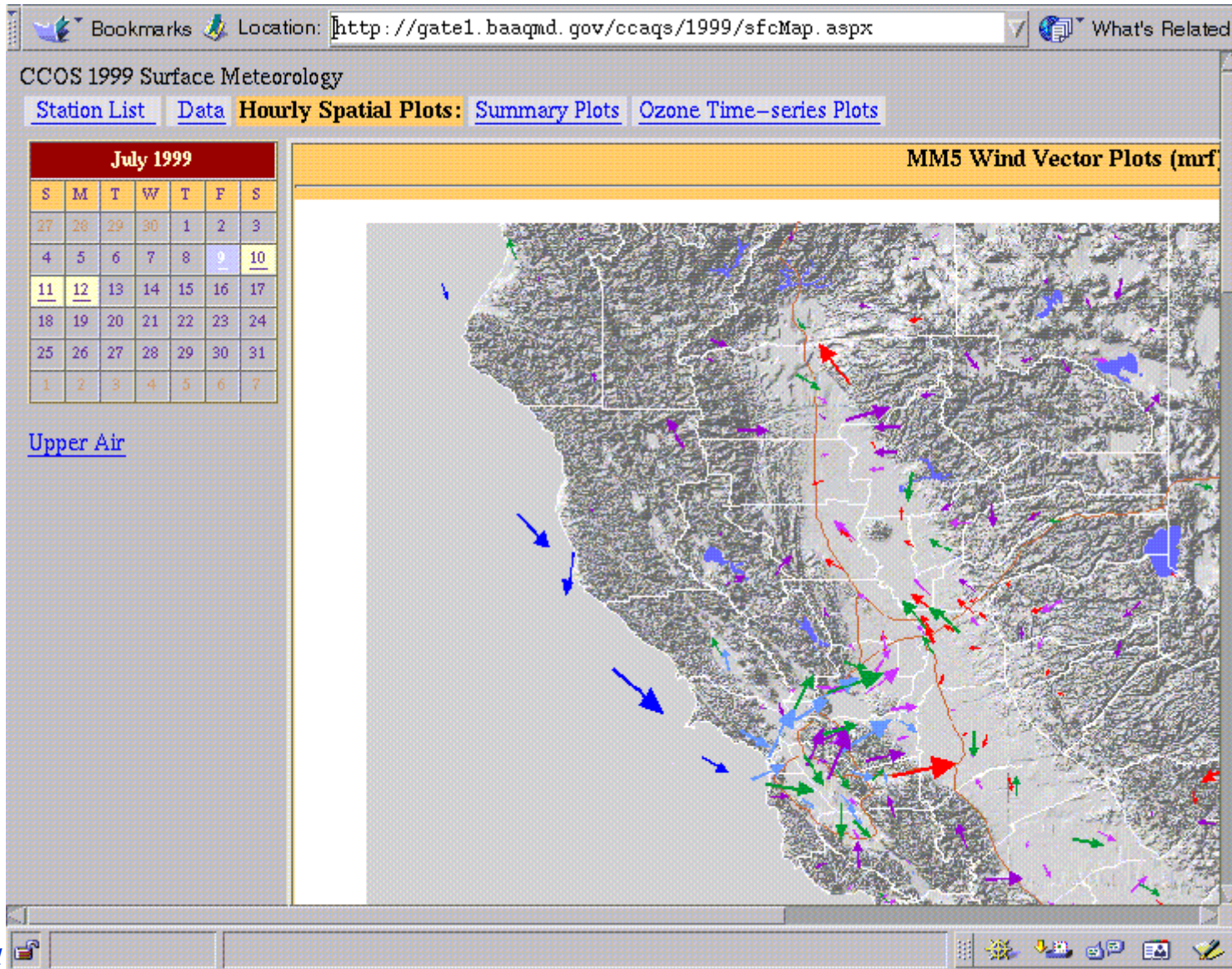
Fresno, 1st Street, 2000

ARB: FSF, Fresno Stn (3425 First St.)





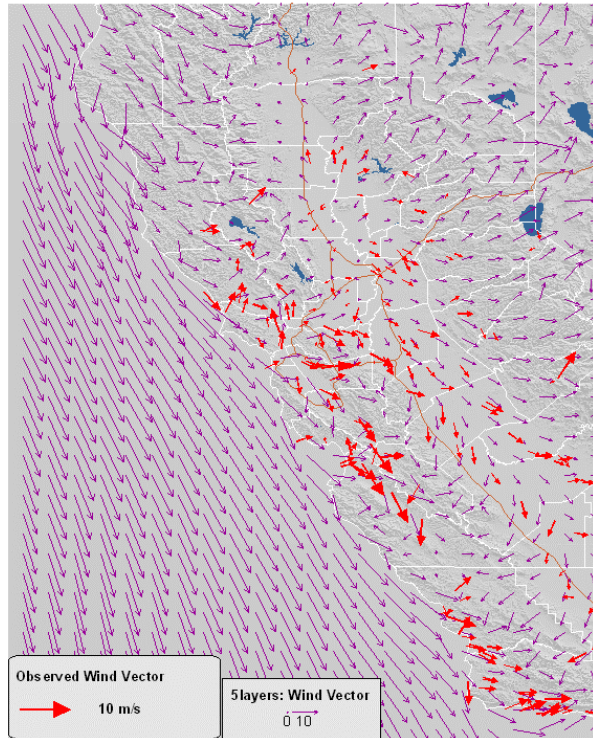
Hourly Spatial Plots





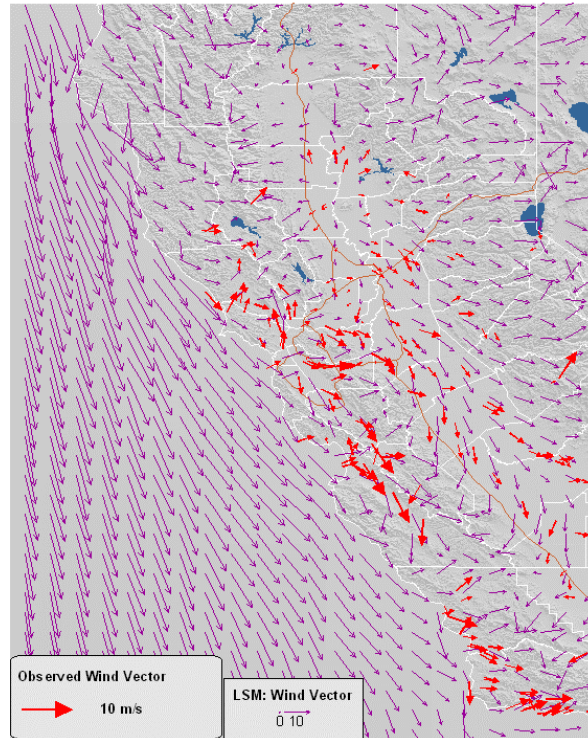
Wind-Vector Spatial Plots

July 31, 2000, 1400 PST



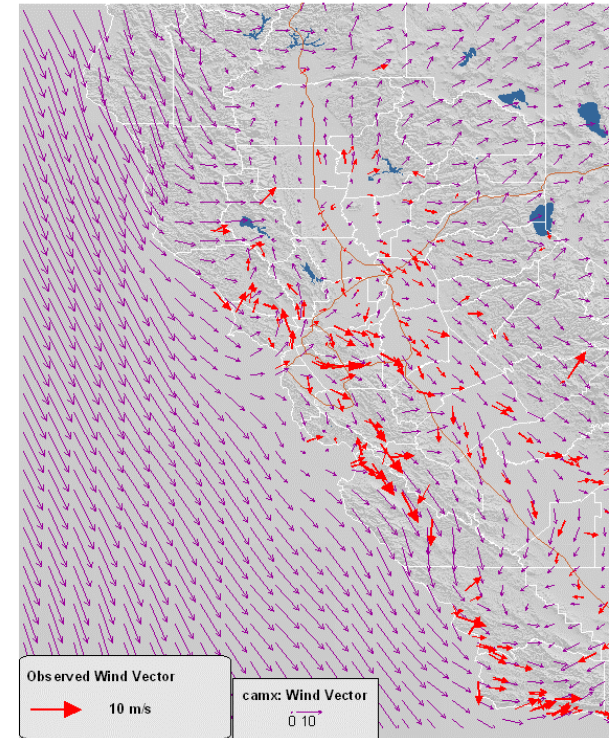
Date: July 31 2000, 14:00 PST

MM5, 5-layer soil, no FDDA



Date: July 31 2000, 14:00 PST

MM5, LSM, FDDA



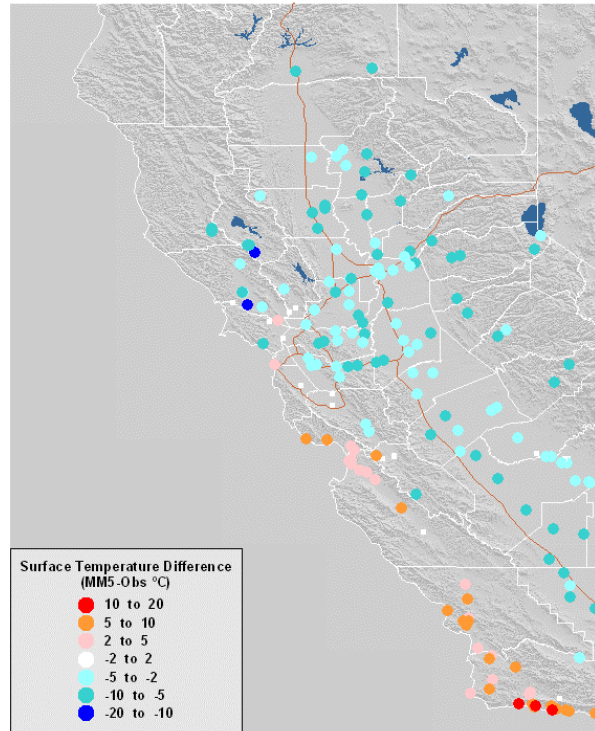
Date: July 31 2000, 14:00 PST

CALMET hybrid



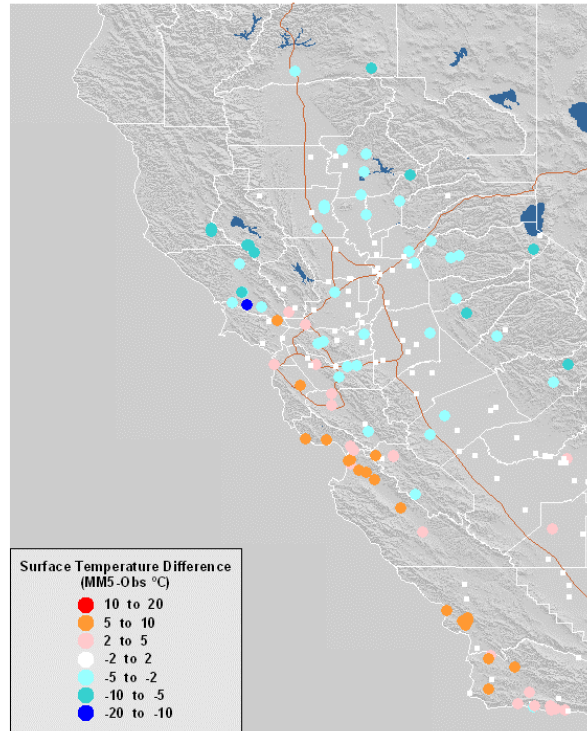
Temperature Difference Spatial Plots

July 31, 2000, 1400 PST



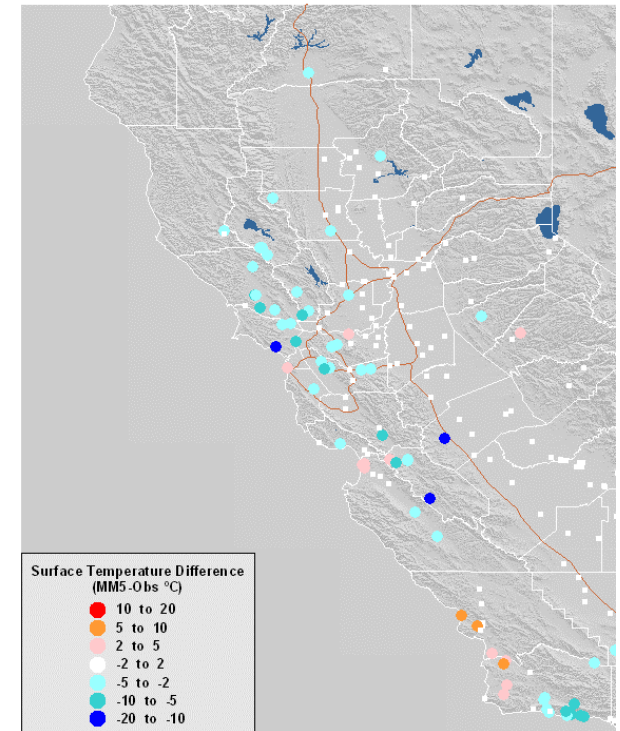
MM5: noaa 5layers, Date: July 31 2000, 14:00 PST

MM5, 5-layer soil, no FDDA



MM5: noaa LSM, Date: July 31 2000, 14:00 PST

MM5, LSM, FDDA

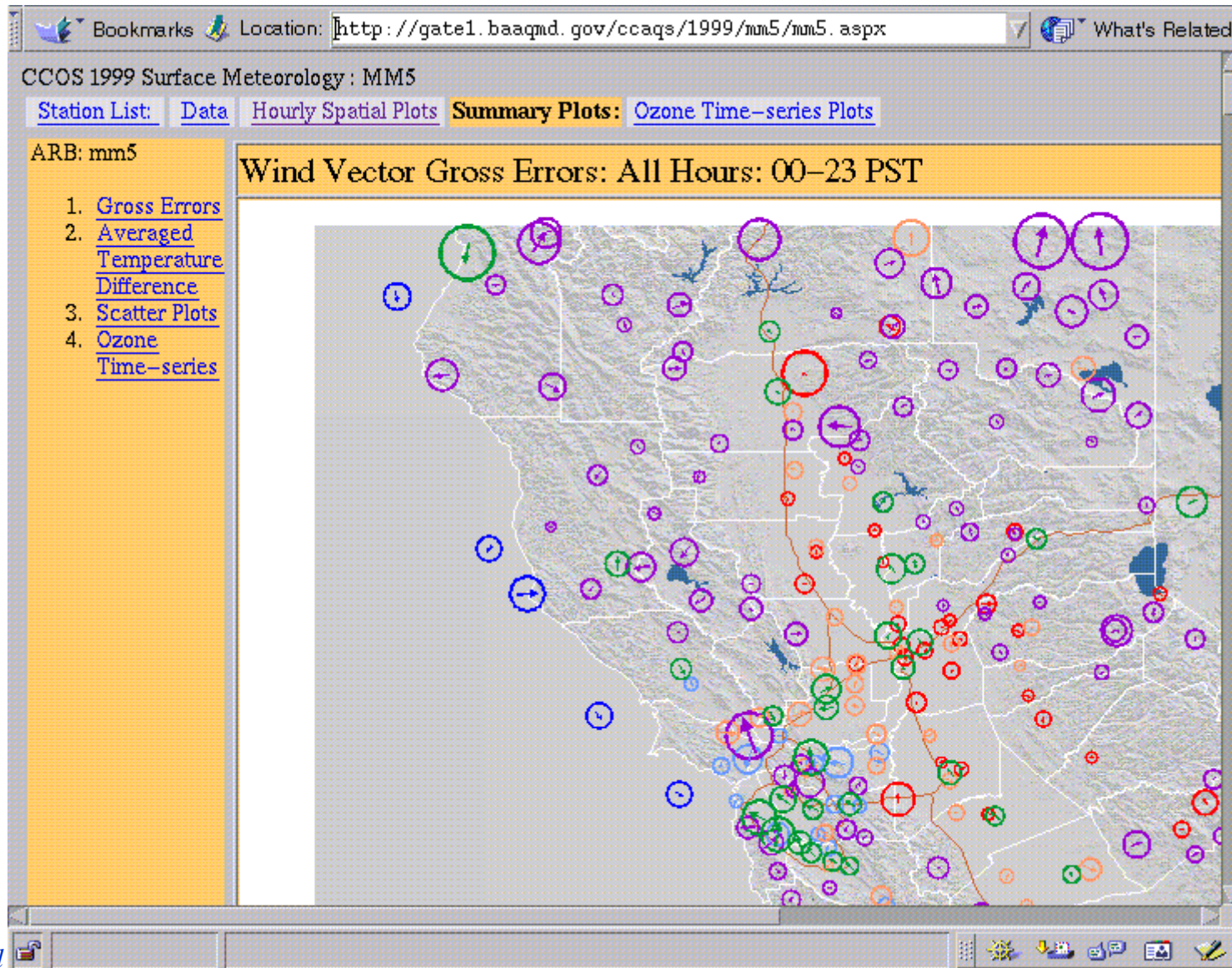


MM5: ARB camx-hybrid, Date: July 31 2000, 14:00 PST

CALMET hybrid



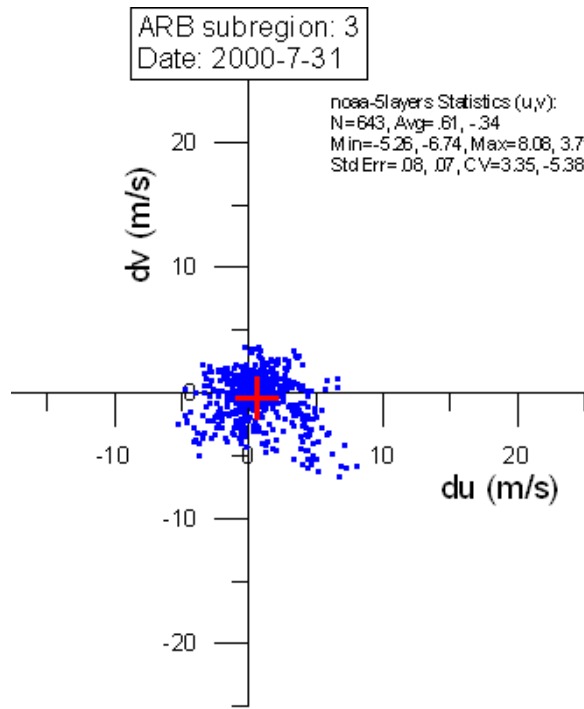
Summary Plots and Statistics



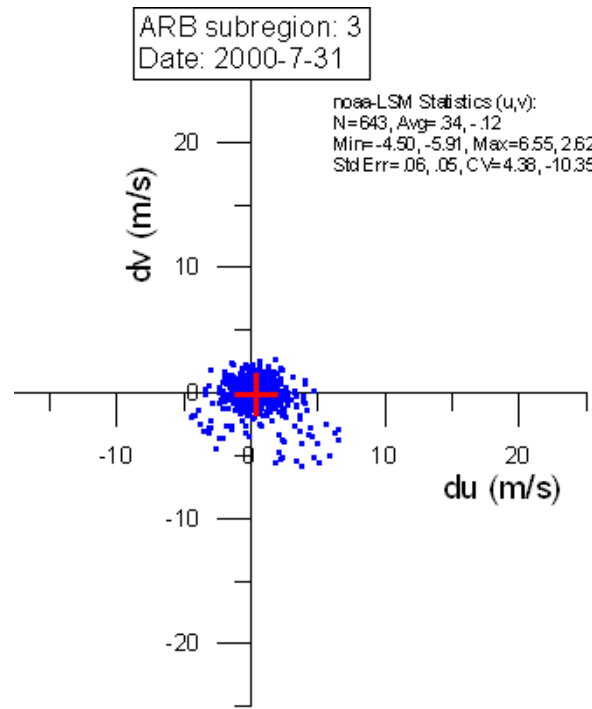


Wind-Difference Scatter Plots

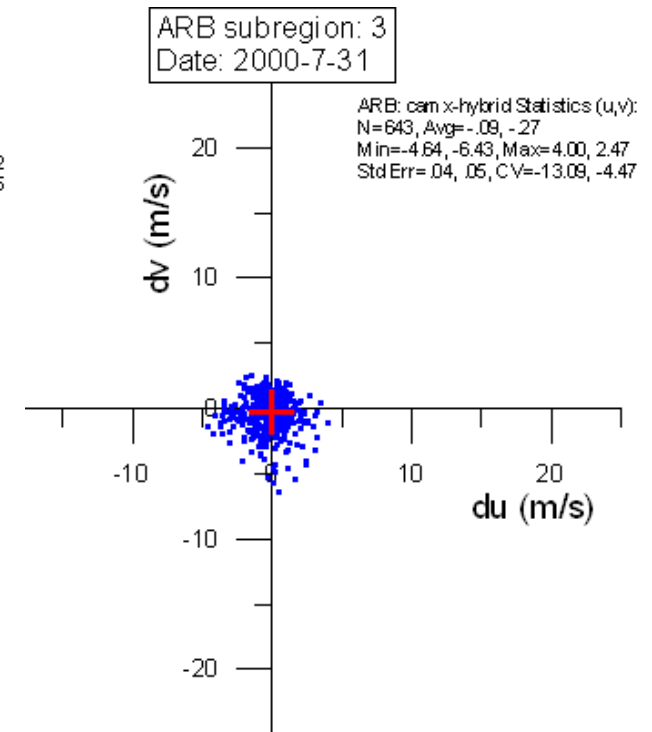
July 31, 2000



MM5, 5-layer soil, no FDDA



MM5, LSM, FDDA

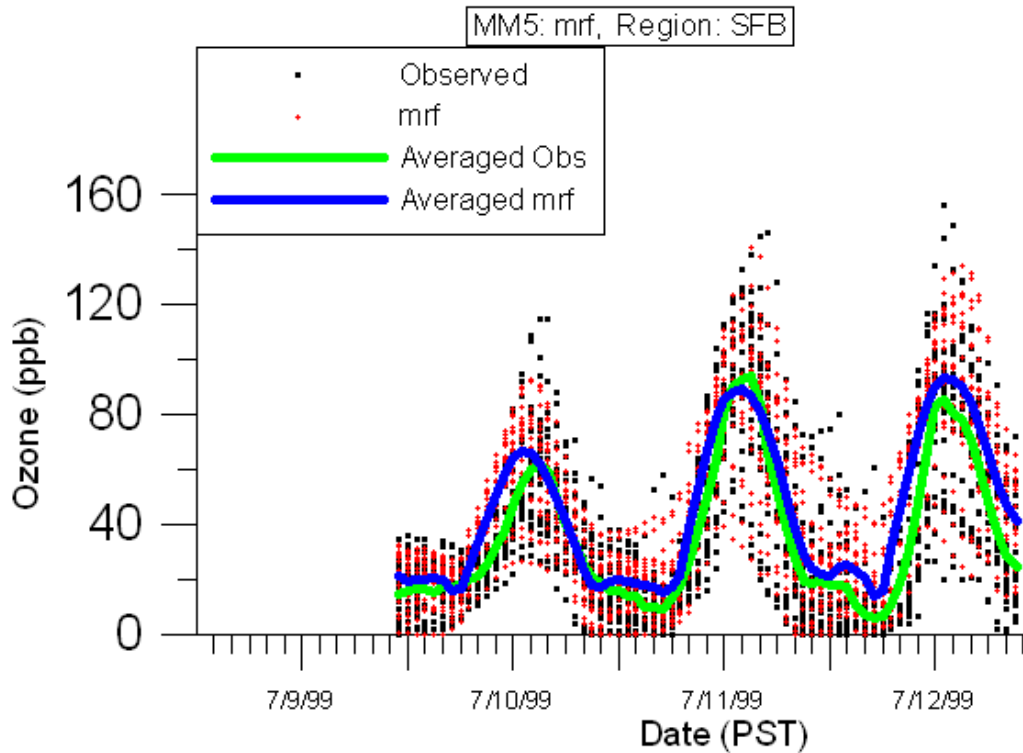


CALMET hybrid

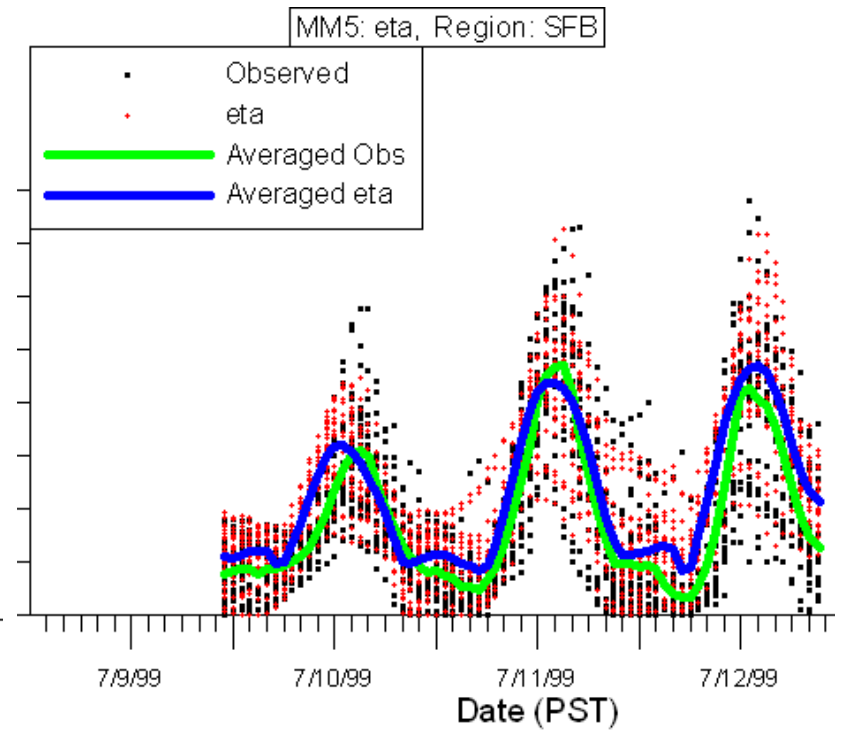


Ozone History Plots

1999



MM5, MRF Mixing Scheme



MM5, Eta Mixing Scheme



Selected Meteorological Fields

- 1999: MM5 with
 - FDDA,
 - Eta Mixing Scheme,
 - 5-layer Soil Model
- 2000: MM5 with
 - FDDA,
 - Eta Mixing Scheme,
 - Land Surface Model



Future Work

- Continue to develop web-based analysis tool for evaluating meteorological fields
- Extend it to analyze photochemical modeling results
- Use it to share modeling analyses with Northern California Agencies during 8-hour SIP work
- Develop strategies to improve met. fields