



# **Bay Area Modeling Advisory Committee Meeting**

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## **Status of District's Modeling Work**

**Saffet Tanrikulu, Ph.D.**

**Steve Soong, Ph.D.**

**July 20, 2004**



# Summary of Work to Date

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## July-August 2000 episode

- **3 MM5 simulations**
  - ✓ **ETA PBL scheme with 5-layer soil model**
  - ✓ **ETA PBL scheme with LSM**
  - ✓ **ETA PBL scheme with LSM and FDDA**
- **2 Types of CAMx simulations**
  - ✓ **CB4**
  - ✓ **SAPRC99**
- **Various updates to EI**
- **Model performance evaluation**
- **QA/QC of data and data analysis**



# Summary of Work to Date (Cont.)

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## July 1999 episode

- **1 MM5 simulation (ARB set up)**
  - ✓ **MRF PBL scheme with 5-layer soil model**
- **2 Types of CAMx simulations**
  - ✓ **CB4**
  - ✓ **SAPRC99**
- **2 updates to EI**
- **Model performance evaluation**
- **QA/QC of data and data analysis in progress**



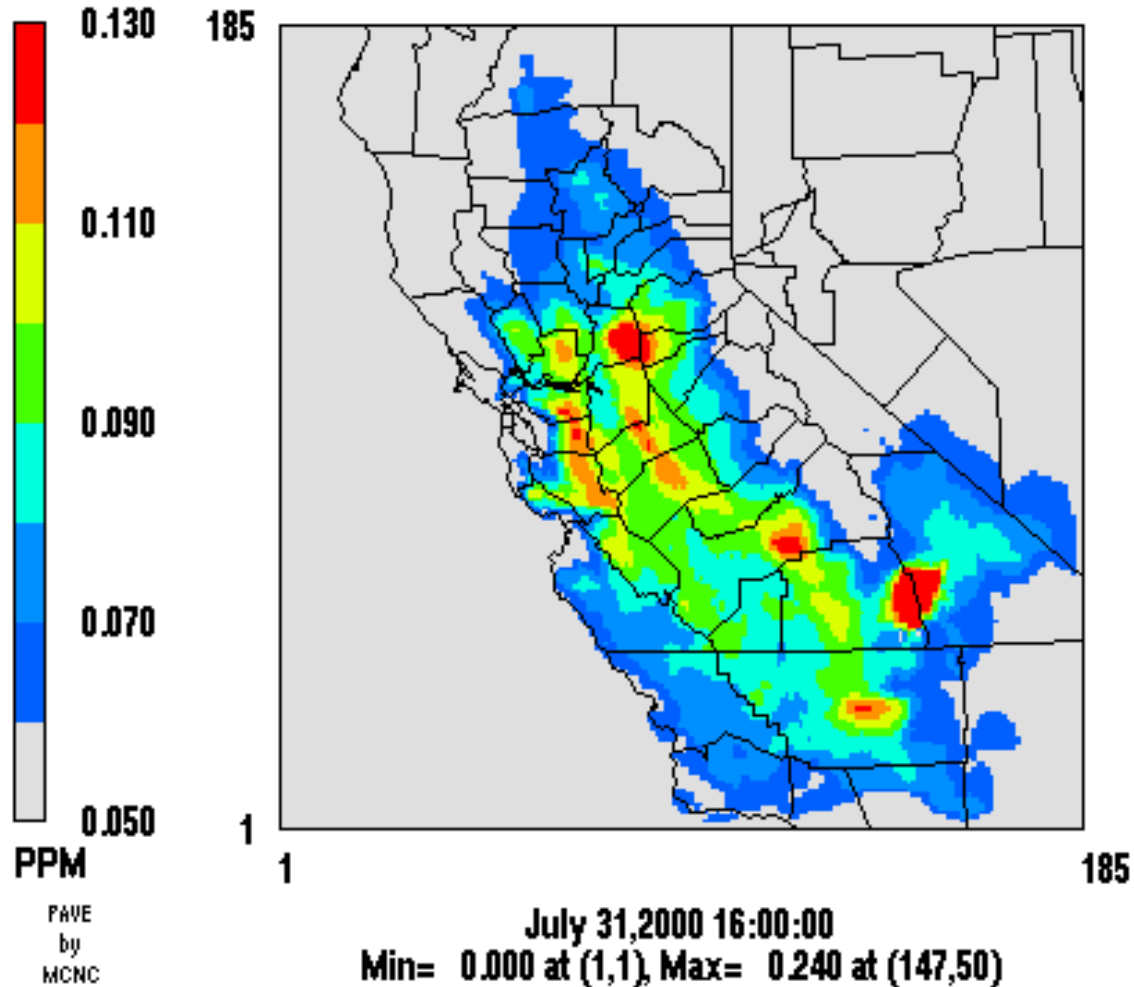
# 2000 days over federal 1-hr standard: observed and simulated

Day hour (pst)	7/31/2000									8/1/2000									8/2/2000								
	12	13	14	15	16	17	18	19	12	13	14	15	16	17	18	19	12	13	14	15	16	17	18	19			
<b>SF Bay Area</b>																											
Livermore	68	88	116	123	126	73	53	34	73	86	92	81	68	65	52	37	88	93	98	84	69	57	49	46			
Sim SAPRC	103	114	123	123	122	118	110	101	102	111	121	126	126	119	104	87	102	114	118	121	119	110	95	78			
Sim CB4	88	94	98	101	102	98	92	83																			
<b>Sacramento</b>																											
Sloughouse		100	92	87	78	74	66	80	88	112	133	126	119	112	95	82	98	102	101	103	98	66	77	69			
North Highlands	81	76	76	76	74	69	57	41	103	106	120	107	91	96	90	74	98	105	108	91	77	57	60	59			
Sim SAPRC	120	135	144	145	145	140	128	117	110	119	124	124	120	114	108	103	105	119	125	125	121	114	105	97			
Sim CB4	106	114	123	127	127	123	113	103																			
<b>San Joaquin</b>																											
Edison	115	110	106	94	81	74	38	19	113	109	93	102	102	96	83	73	129	151	139	121	76	51	45	39			
Turlock	75	91	104	105	96	88	64	52	100	101	97	104	86	85	73	61	98	95	114	117	116	131	106	79			
Modesto - 14th	74	87	94	90	84	81	60	41	80	84	99	87	94	91	70	53	90	94	95	113	131	128	85	64			
Parlier	90	82	103	96	86	69	57	50	93	99	102	105	82	72	56	39	86	96	97	94	97	89	74	58			
Sim SAPRC	116	127	132	129	126	124	123	107	120	128	127	124	124	119	109	98	111	112	113	114	113	114	108	99			
Sim CB4	97	107	115	114	111	109	108	103																			

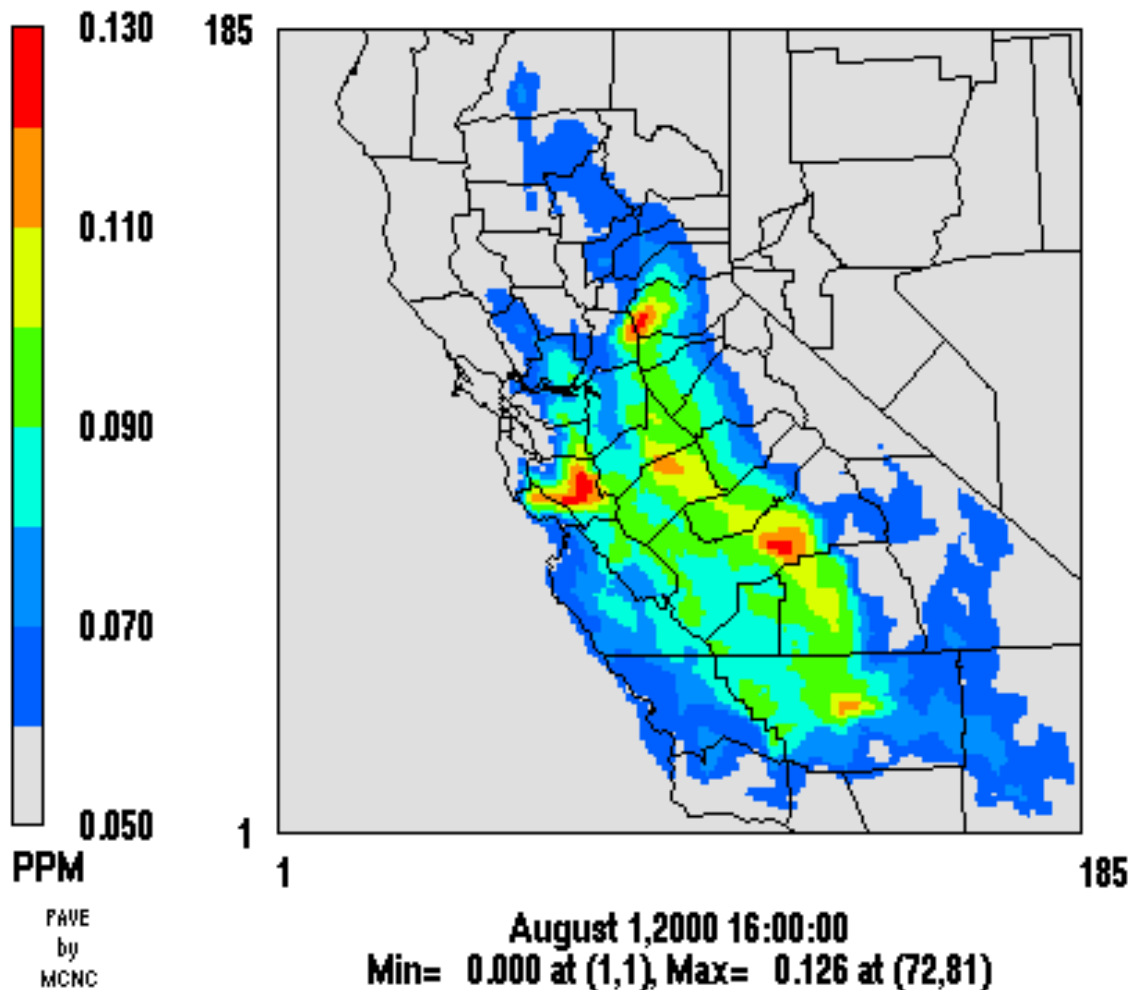
# 1999 days over federal 1-hr standard: observed and simulated

Day hour (pst)	7/11/1999								7/12/1999							
	12	13	14	15	16	17	18	19	12	13	14	15	16	17	18	19
<b>SF Bay Area</b>																
Concord	113	115	<b>126</b>	120	<b>126</b>	99	102	81	<b>134</b>	<b>156</b>	149	<b>129</b>	104	93	99	91
Livermore	88	94	96	<b>138</b>	<b>145</b>	<b>146</b>	<b>128</b>	93	117	<b>144</b>	<b>133</b>	<b>128</b>	111	94	86	73
Fremont	79	111	<b>133</b>	117	101	66	43	14	93	98	90	88	80	73	59	53
San Martin	112	121	124	<b>125</b>	97	62	56	45	115	96	90	74	65	55	46	37
Sim SAPRC	119	<b>134</b>	<b>142</b>	<b>146</b>	<b>143</b>	<b>133</b>	120	107	120	<b>135</b>	<b>144</b>	<b>146</b>	<b>146</b>	<b>142</b>	<b>134</b>	<b>125</b>
Sim CB4	115	<b>125</b>	<b>132</b>	<b>138</b>	<b>137</b>	<b>127</b>	114	101	118	<b>132</b>	<b>140</b>	<b>144</b>	<b>144</b>	<b>141</b>	<b>132</b>	<b>121</b>
<b>Sacramento</b>																
Folsom	<b>125</b>	<b>132</b>	<b>133</b>	<b>137</b>	<b>125</b>	107	98	90	109	108	100	89	89	92	107	79
Vacaville	96	97	99	122	118	101	82	62	108	<b>127</b>	<b>140</b>	115	95	74	65	59
Auburn	85	90	91	93	111	<b>133</b>	118	112	89	93	90	89	99	95	82	71
Sloughhouse	<b>125</b>	<b>131</b>	116	109	105	103	100	83	108	106	110	103	96	105	91	72
Roseville	108	120	<b>128</b>	<b>128</b>	119	108	100	81	96	90	82	78	78	81	108	74
Rocklin	99	115	<b>128</b>	123	119	111	105	92	99	96	85	79	80	82	104	87
Sim SAPRC	<b>127</b>	<b>137</b>	<b>140</b>	<b>143</b>	<b>140</b>	<b>132</b>	120	108	<b>137</b>	<b>142</b>	<b>142</b>	<b>139</b>	<b>134</b>	<b>126</b>	<b>116</b>	<b>109</b>
Sim CB4	118	<b>128</b>	<b>135</b>	<b>136</b>	<b>136</b>	<b>127</b>	113	100	<b>130</b>	<b>140</b>	<b>139</b>	<b>137</b>	<b>135</b>	<b>128</b>	<b>122</b>	<b>110</b>
<b>San Joaquin</b>																
Clovis	124	<b>140</b>	<b>142</b>	<b>125</b>	105	110	81	58	112	124	108	102	98	96	90	66
Fresno - 1st St	<b>128</b>	<b>130</b>	<b>132</b>	<b>135</b>	124	114	99	63	114	115	108	95	88	87	75	60
Tracy	84	94	91	97	97	97	95	94	102	106	117	118	<b>132</b>	121	113	99
Stockton - Hazelton	107	122	<b>130</b>	122	108	113	91	62	100	96	95	90	86	102	95	75
Merced	111	115	118	116	112	110	110	100	121	<b>125</b>	117	115	102	108	118	116
Sim SAPRC	107	112	118	119	115	111	105	100	107	112	112	109	<b>125</b>	<b>134</b>	<b>134</b>	<b>125</b>
Sim CB4	104	109	112	112	109	105	99	93	108	112	113	110	<b>126</b>	<b>133</b>	<b>132</b>	<b>121</b>

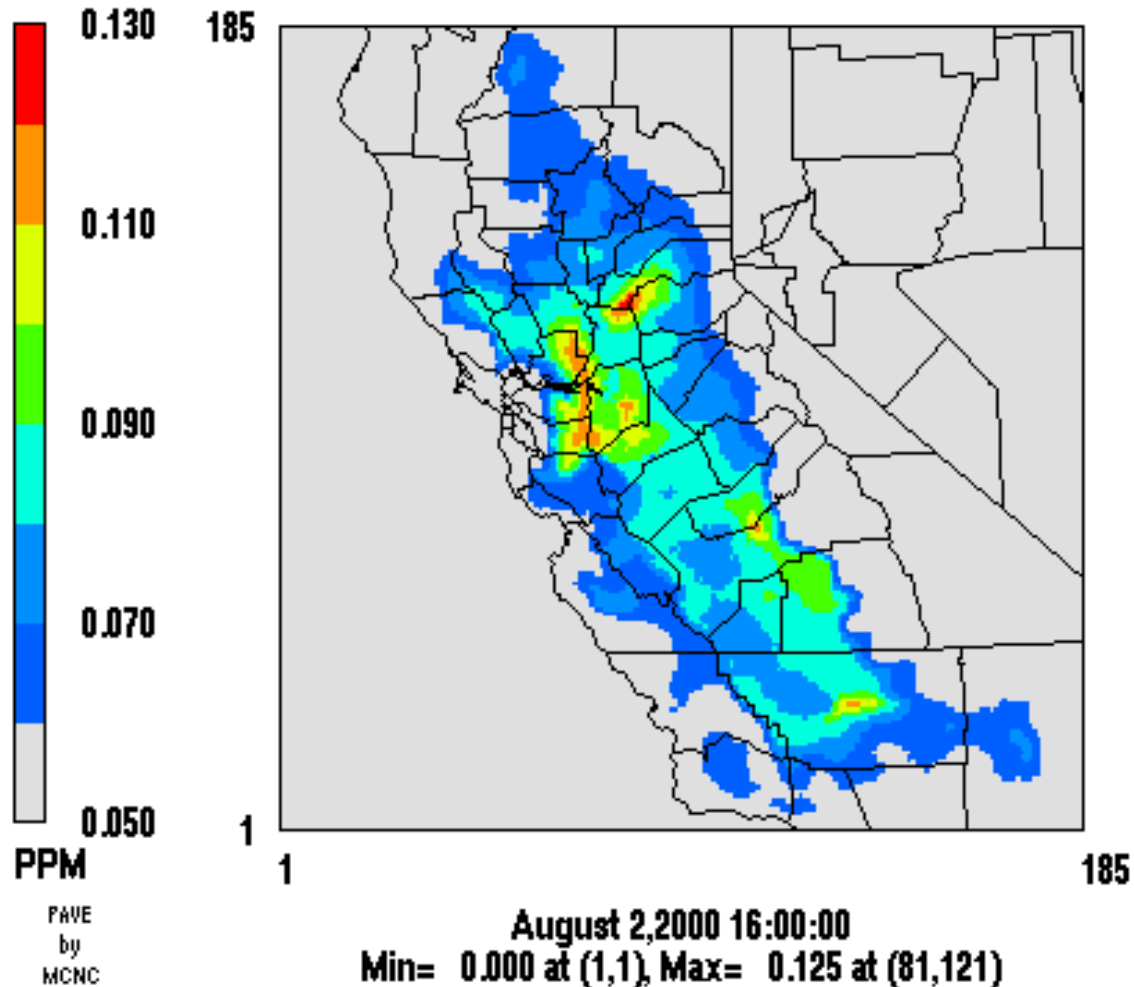
# July 31, 2000 16:00 PST SAPRC



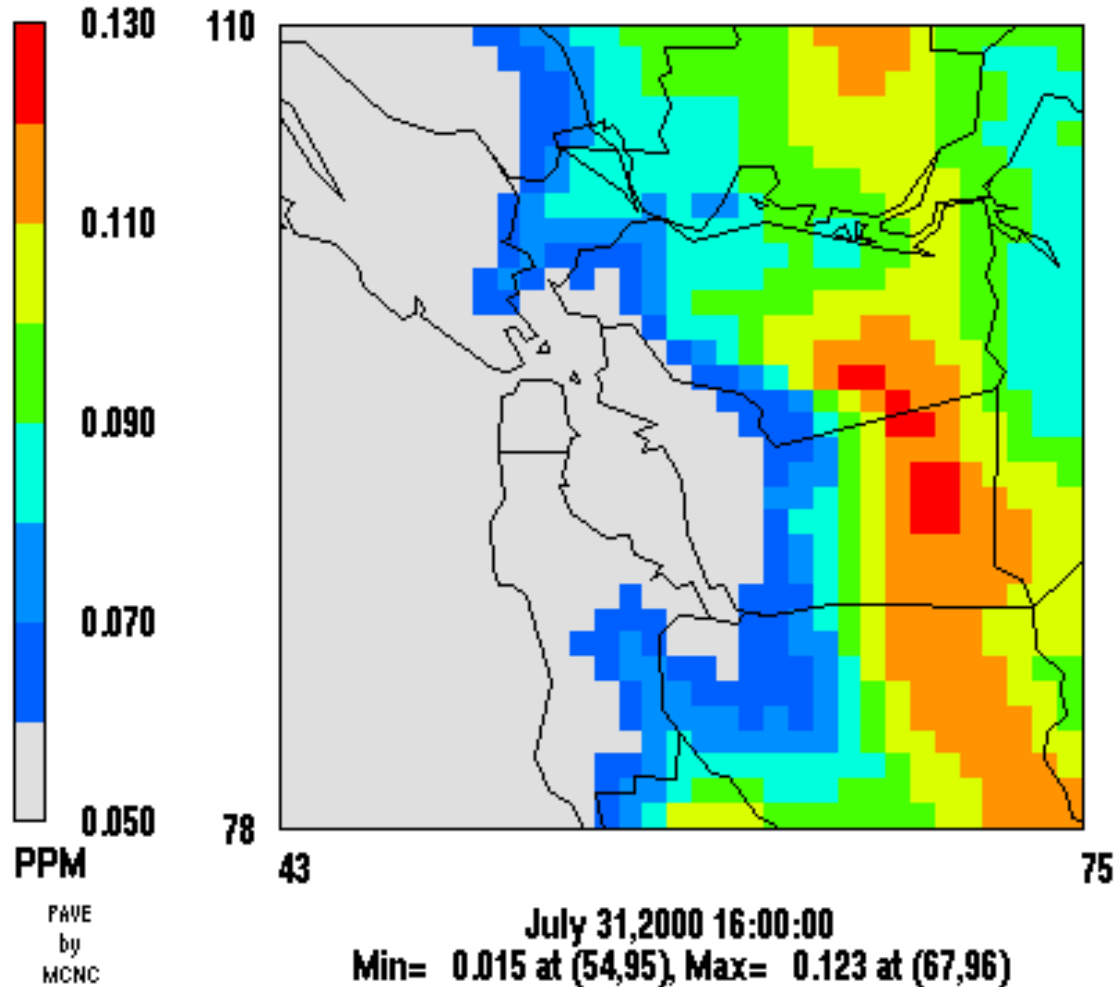
# August 1, 2000 16:00 PST SAPRC



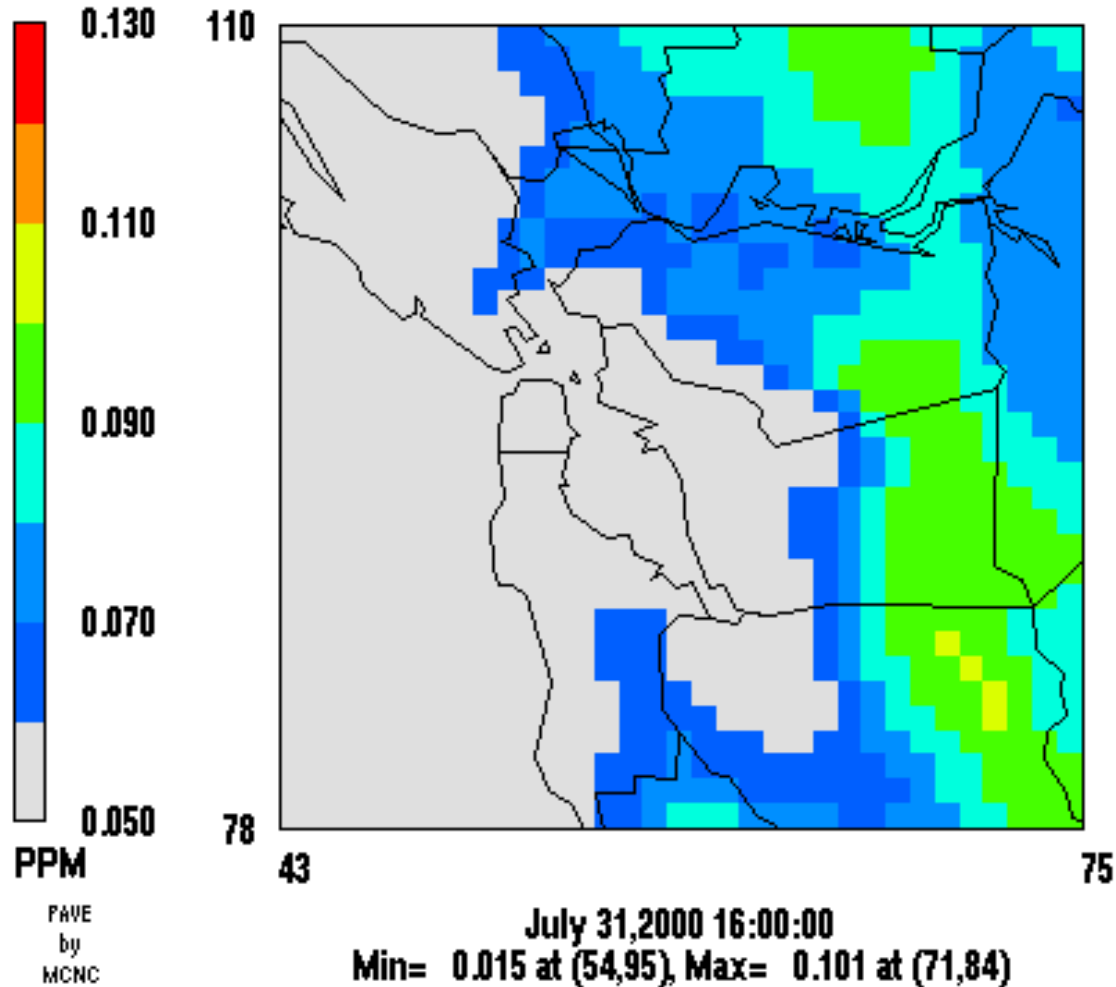
# August 2, 2000 16:00 PSD SAPRC



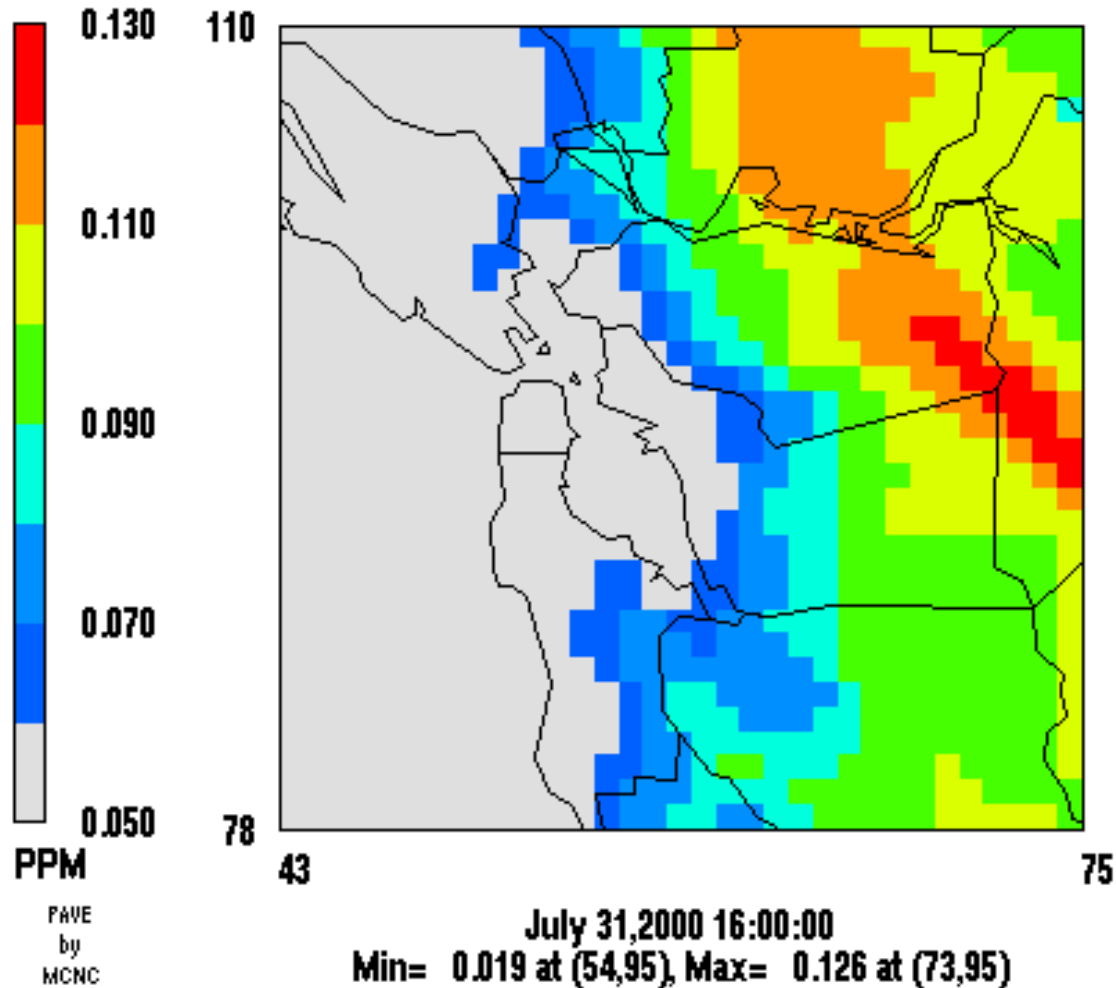
# July 31, 2000 16:00 PST SAPRC



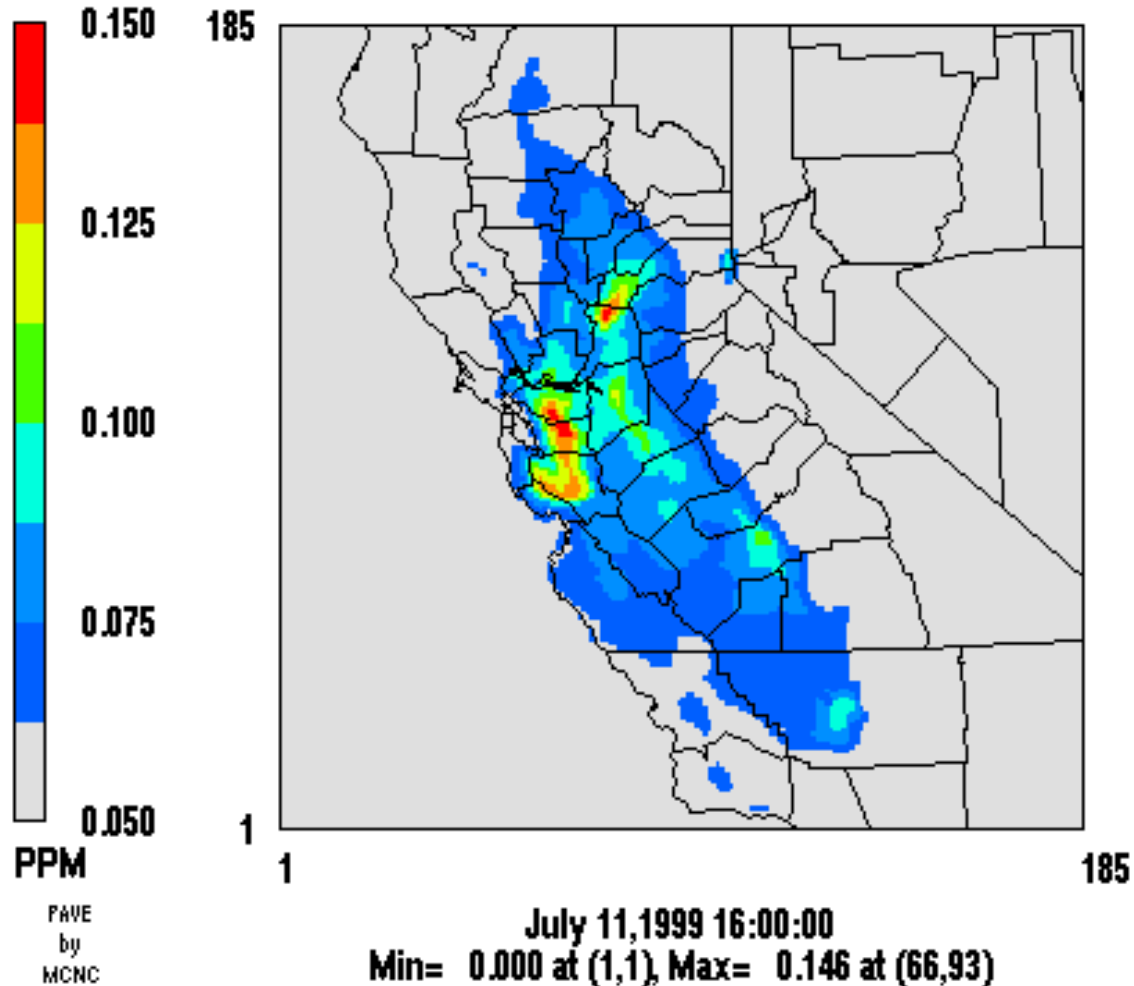
# July 31, 2000 16:00 PST CB4



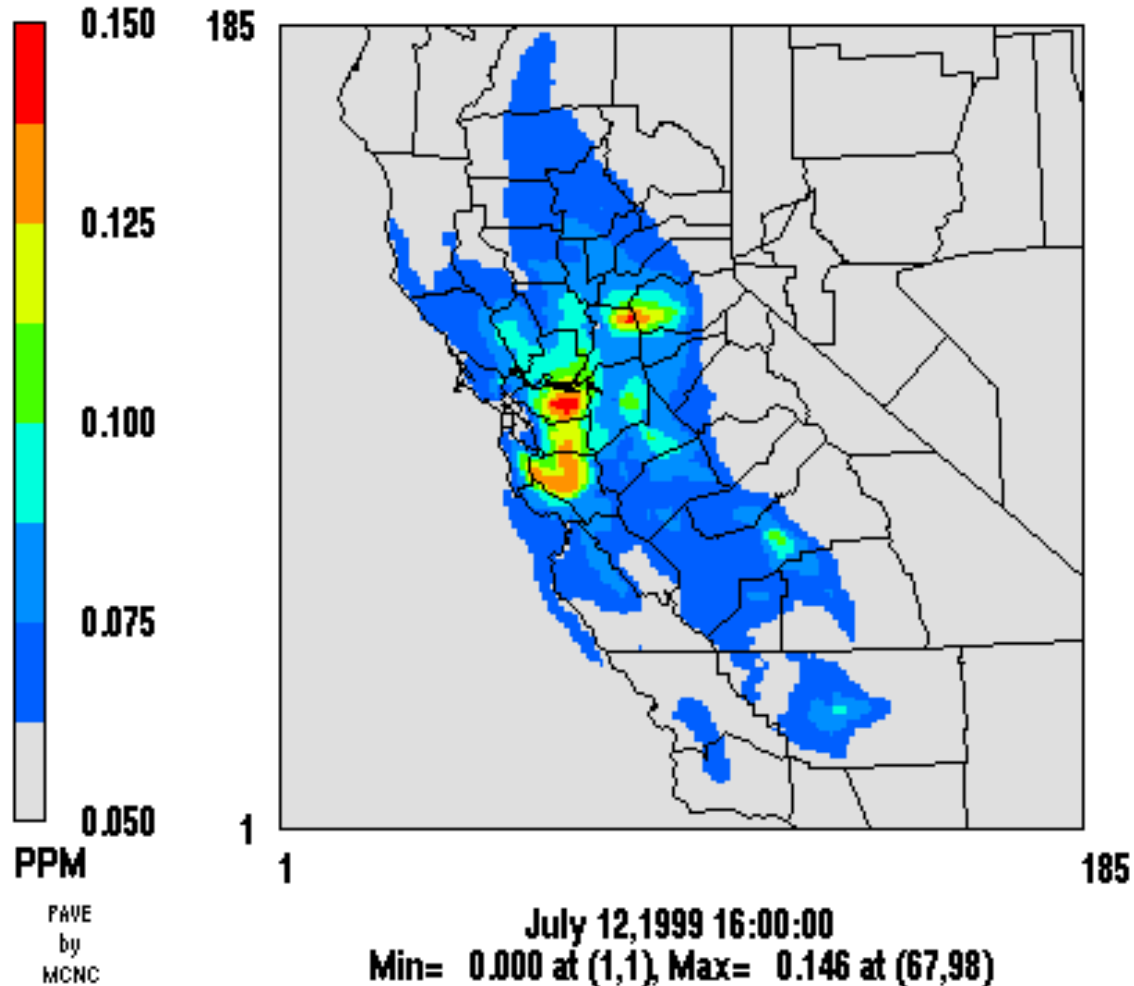
# July 31, 2000 16:00 PST SAPRC MM5-LSM-FDDA



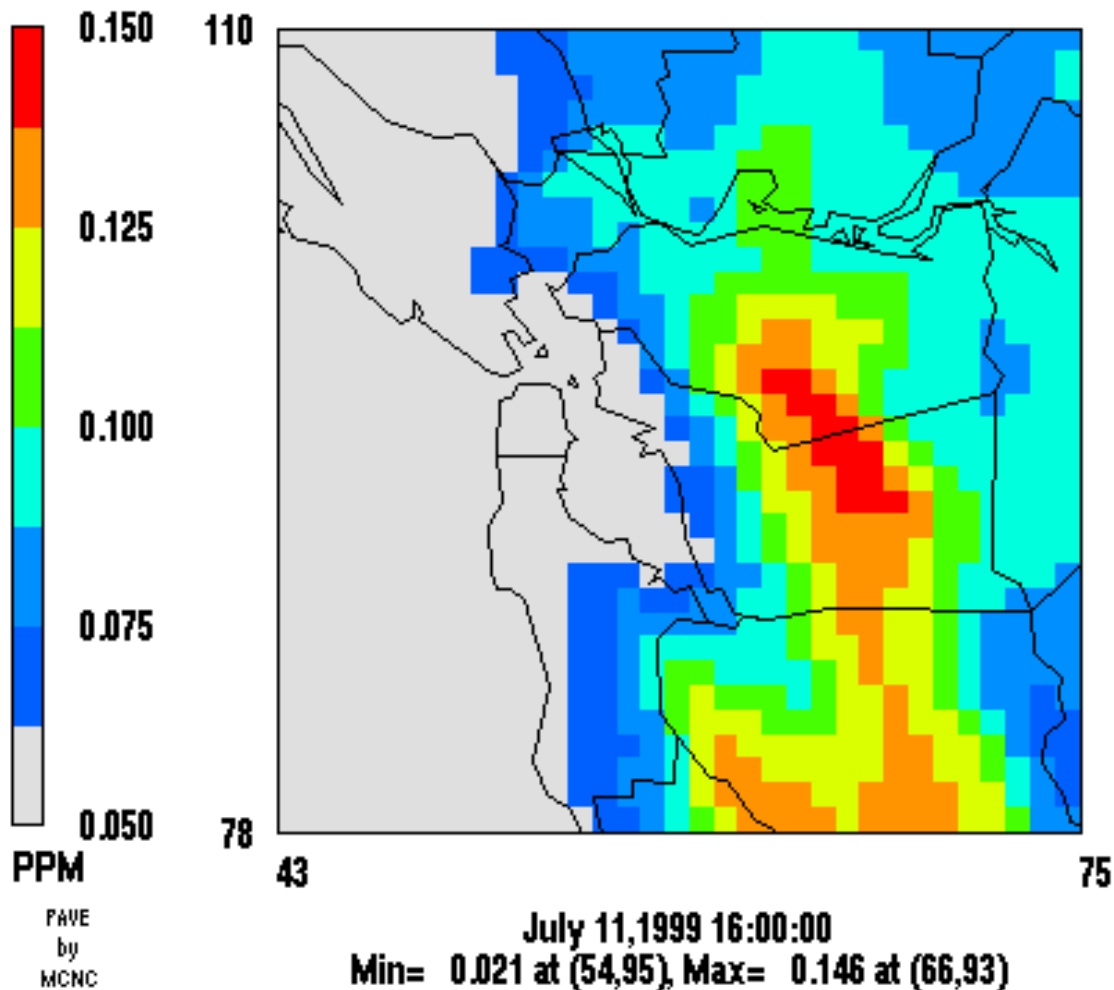
# July 11, 1999 16:00 PST SAPRC



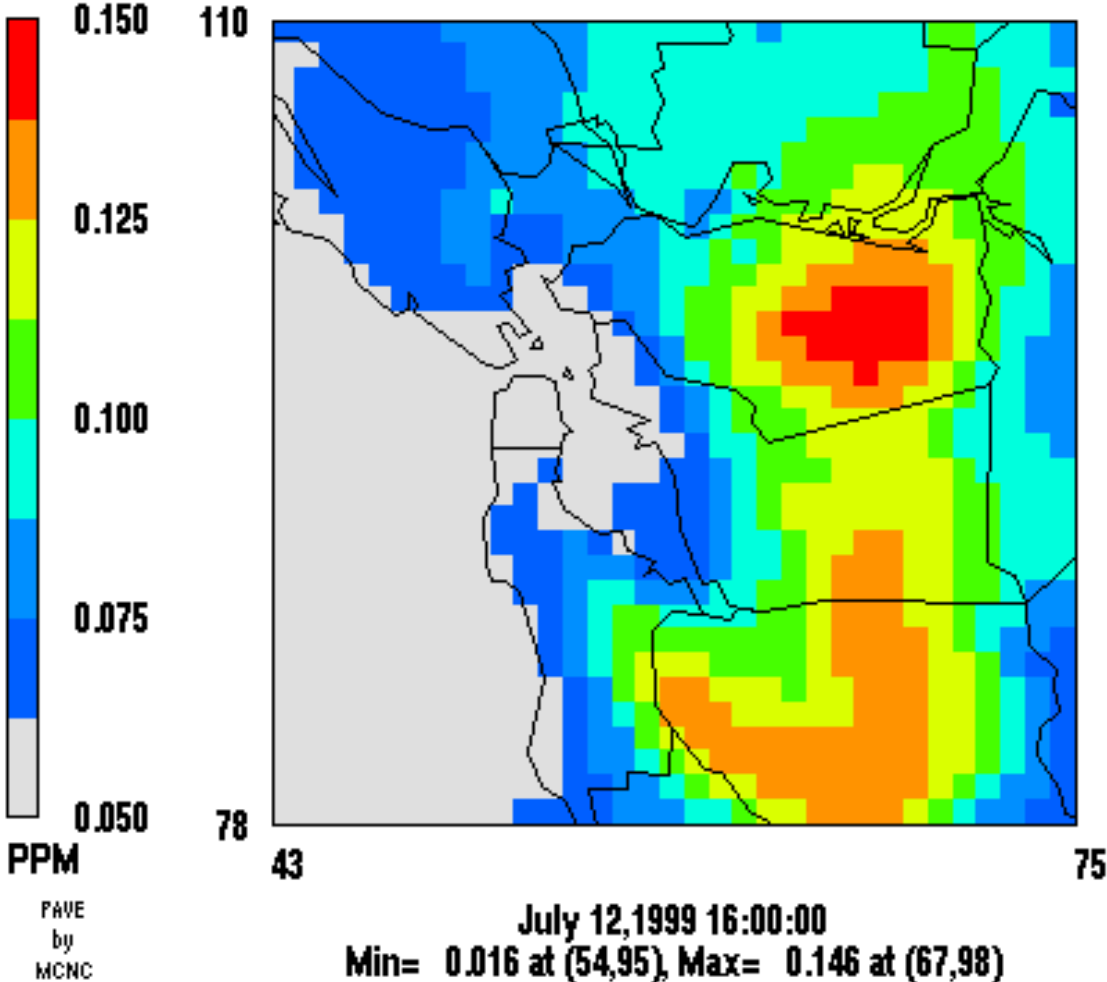
# July 12, 1999 16:00 PST SAPRC



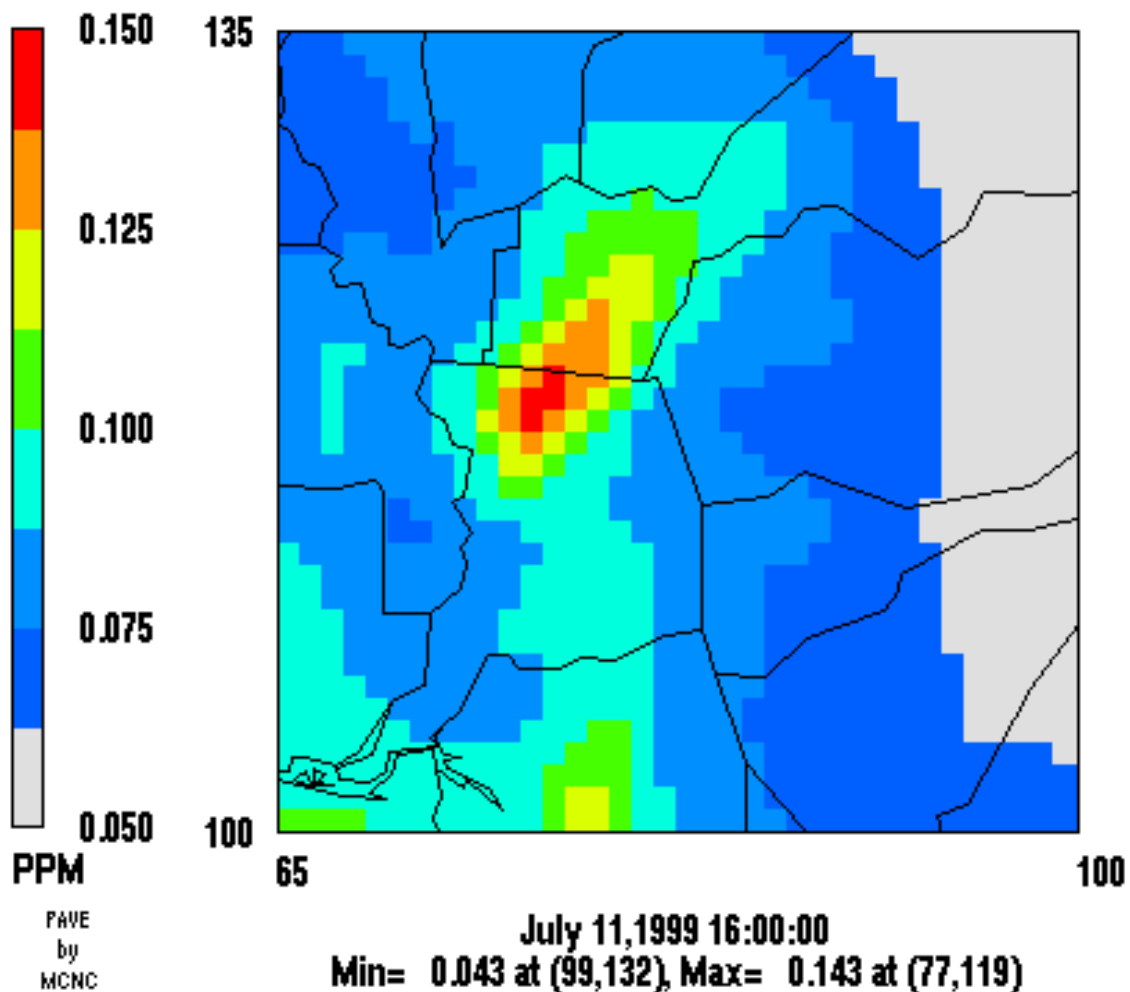
# July 11, 1999 16:00 PST SAPRC BA



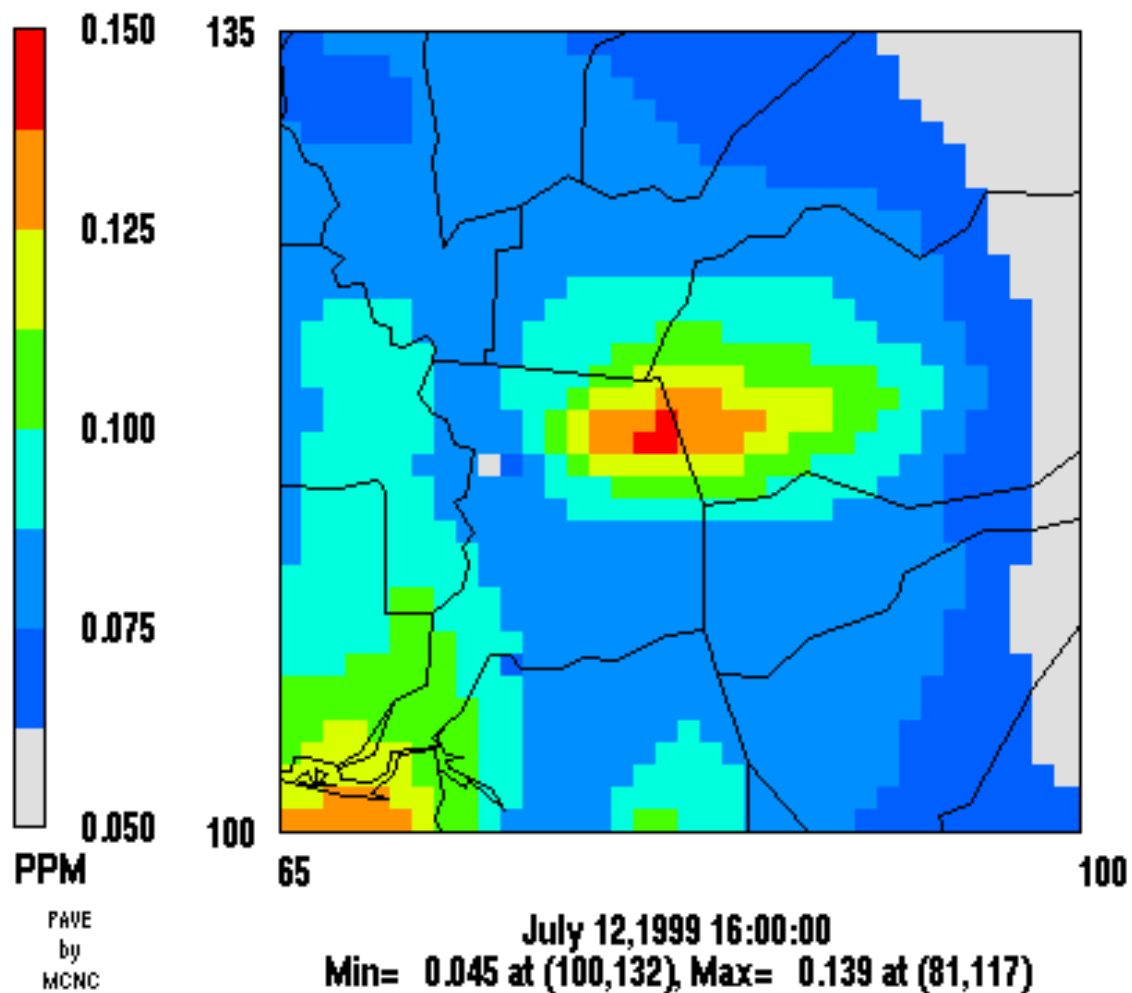
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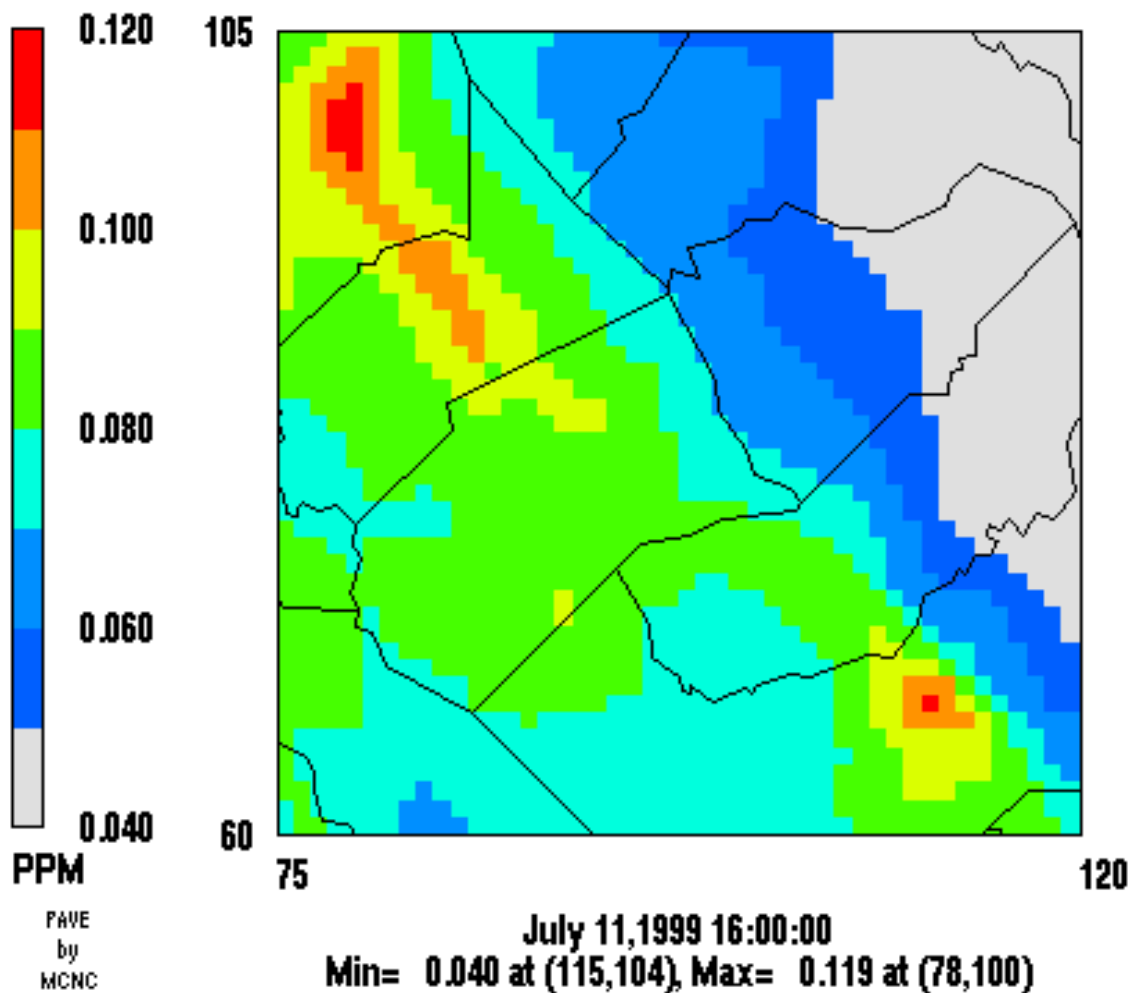
# July 11, 1999 16:00 PST SAPRC SAC



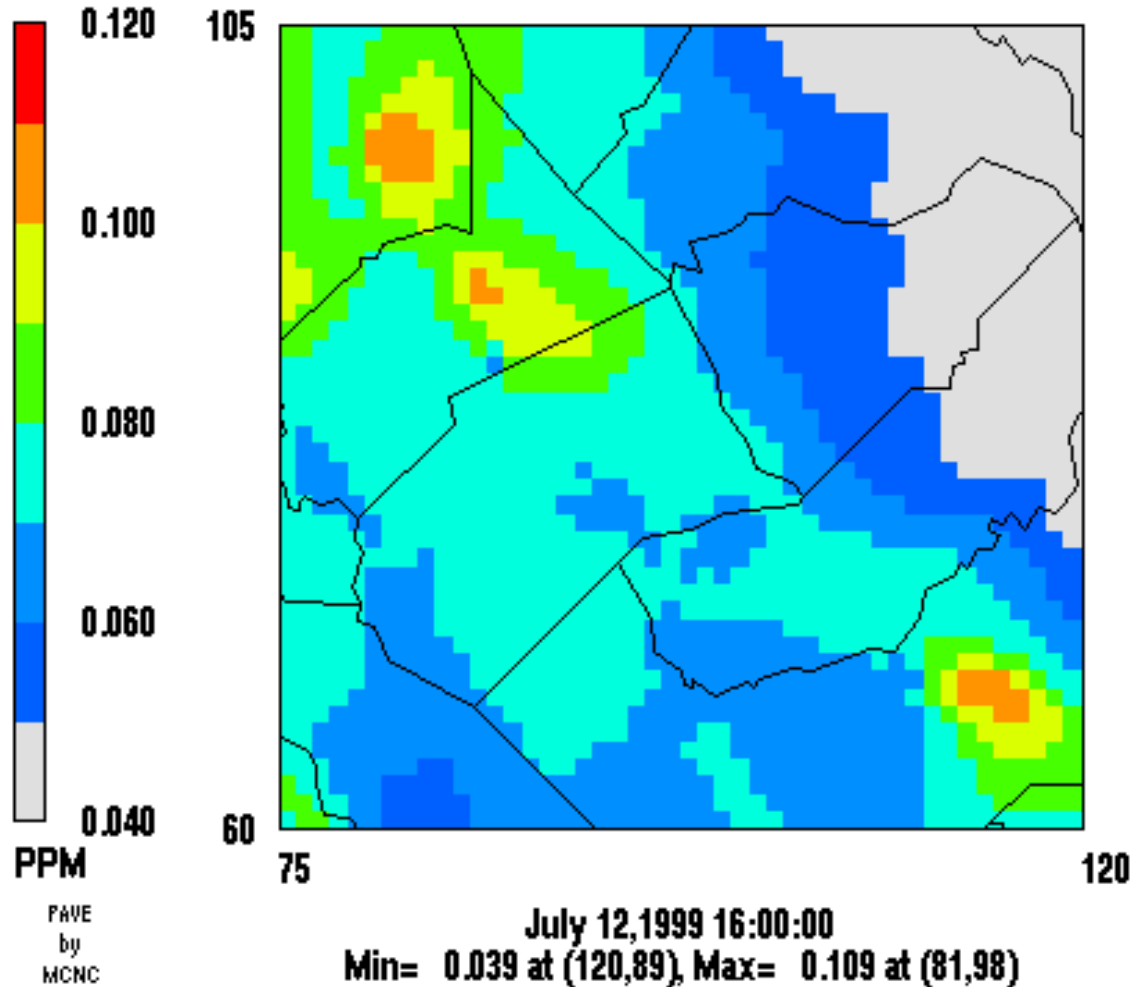
# July 12, 1999 16:00 PST SAPRC SAC



# July 11, 1999 16:00 PST SAPRC SJV

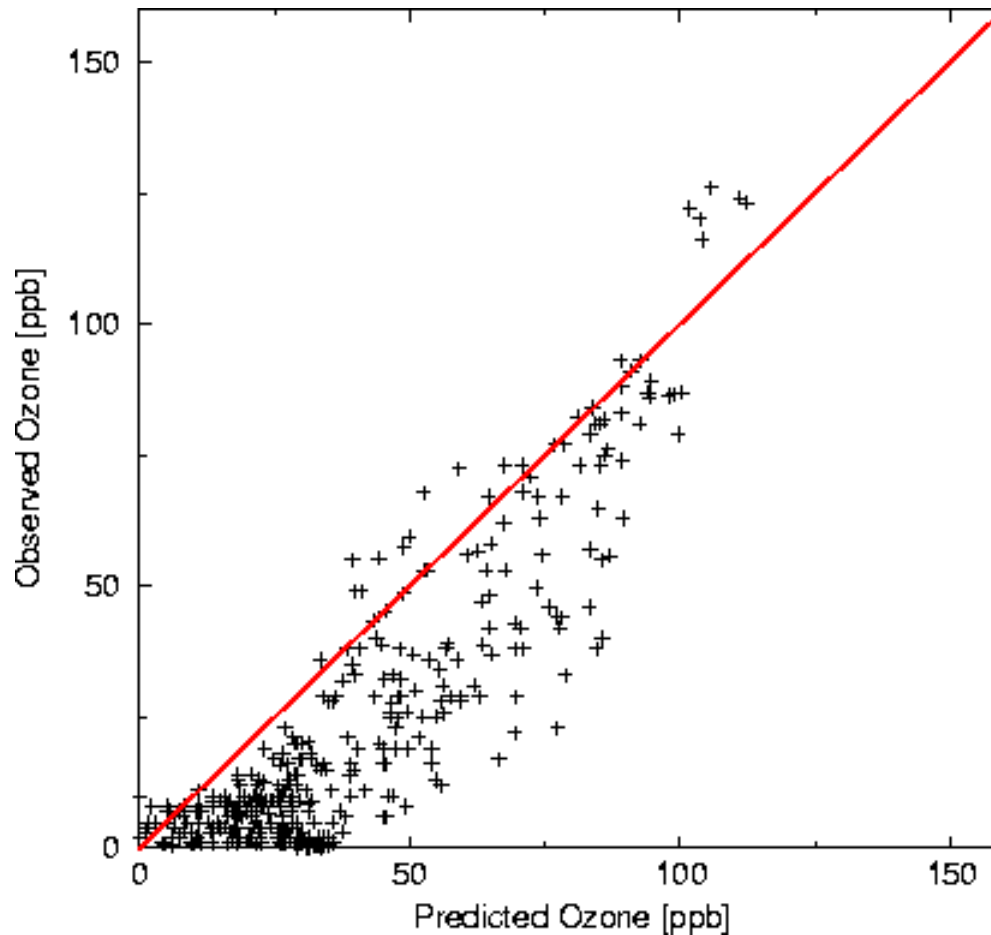


# July 12, 1999 16:00 PST SAPRC SJV





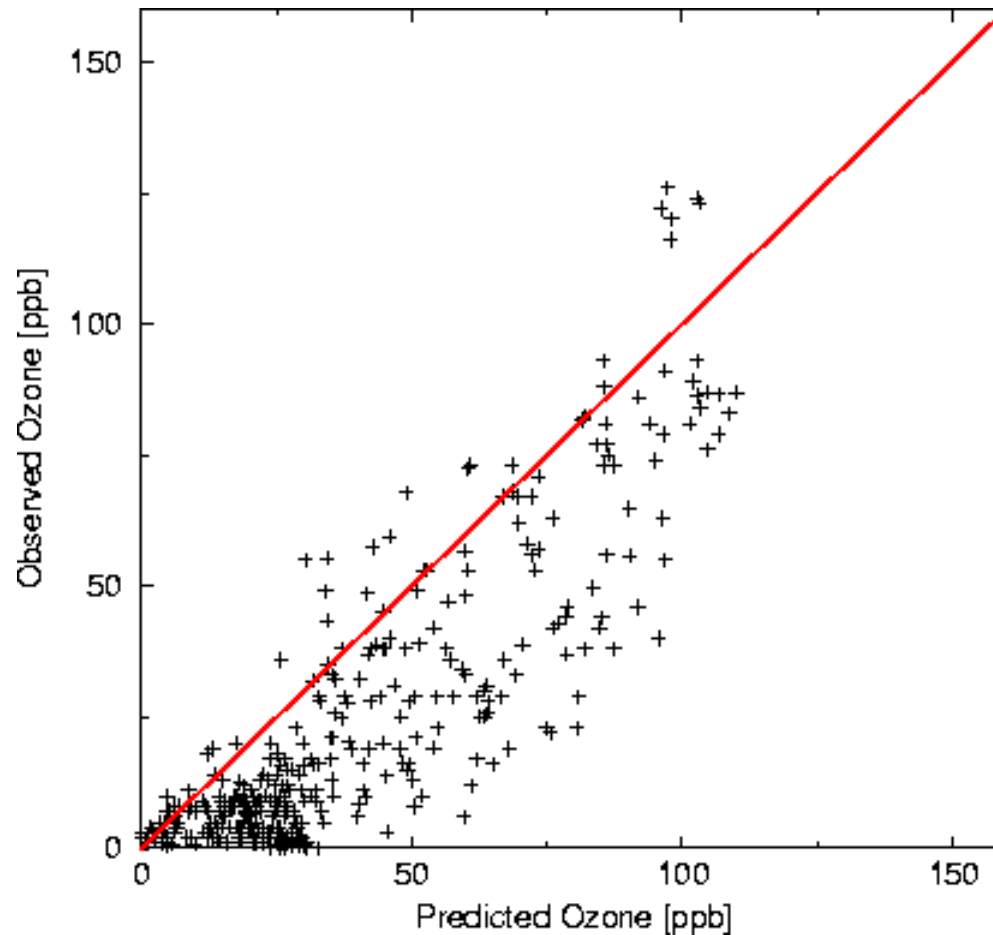
# SAPRC99 CAMx simulations



SFBA  
5-layer soil  
7/31/2000



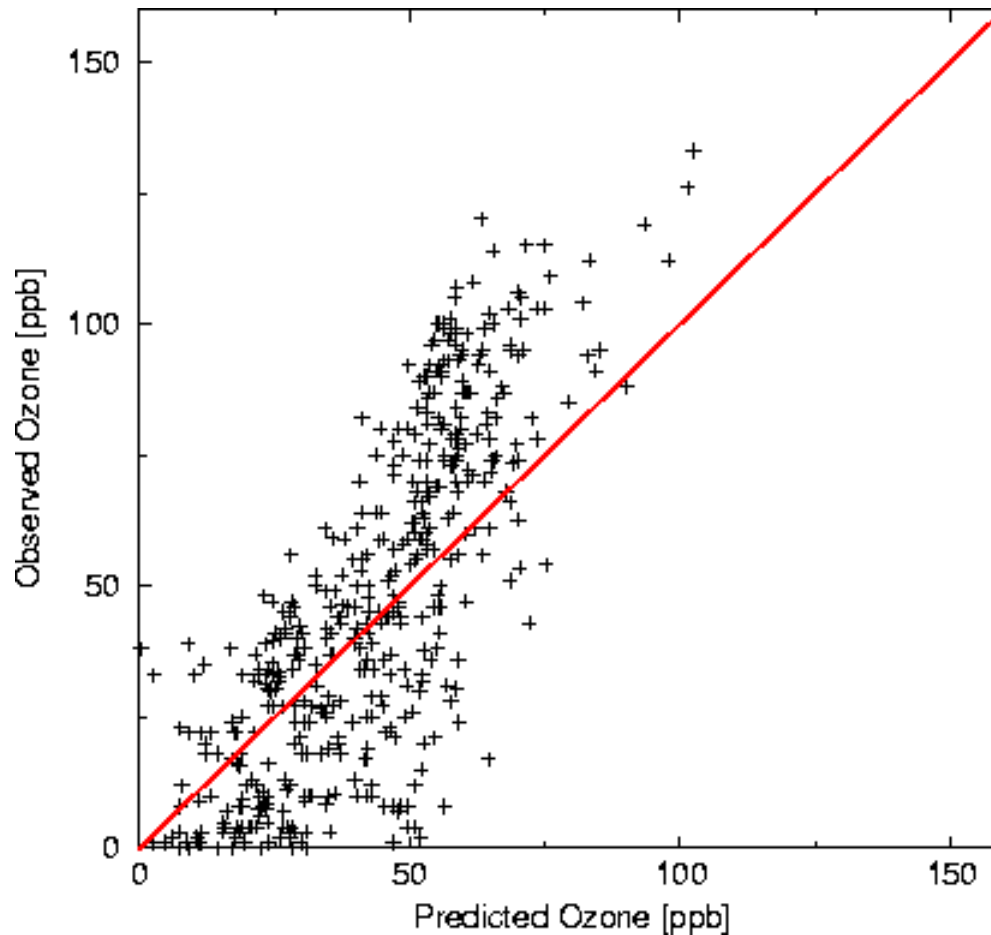
# SAPRC99 simulations (cont.)



SFBA  
LSM-FDDA  
7/31/2000



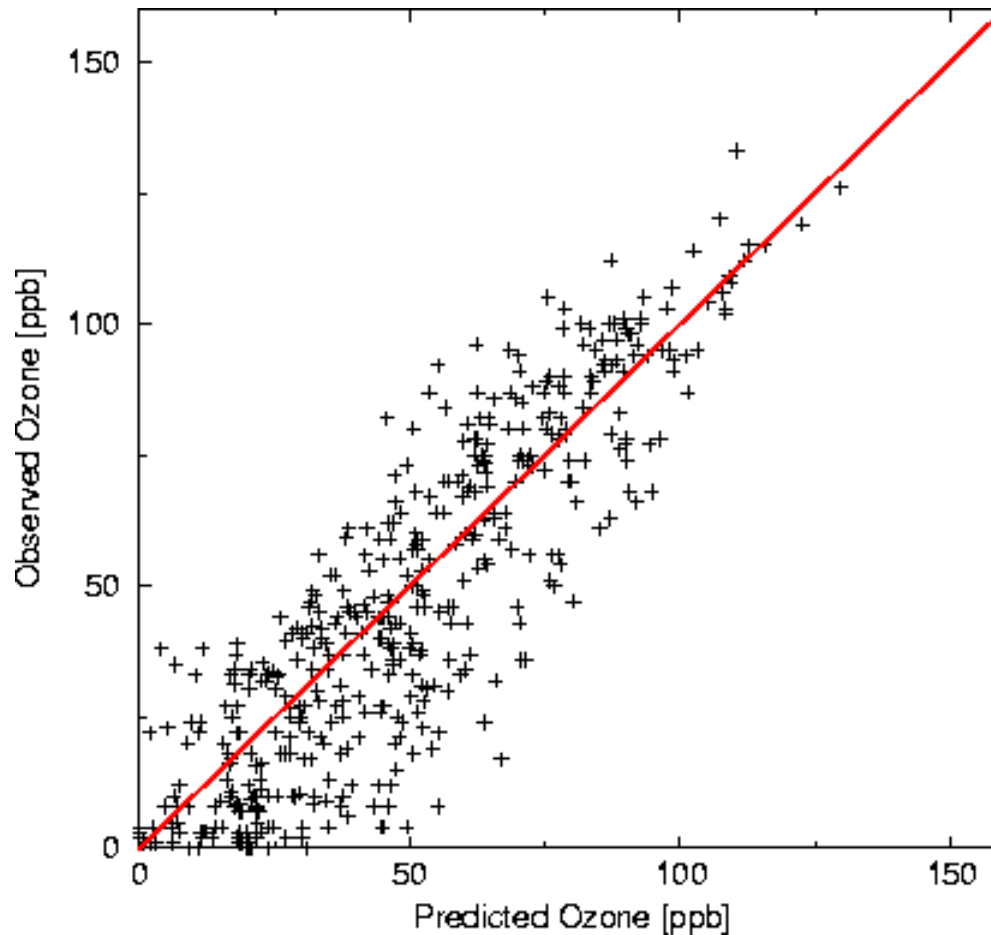
# SAPRC99 simulations (cont.)



Sacramento  
5-layer soil  
8/1/2000



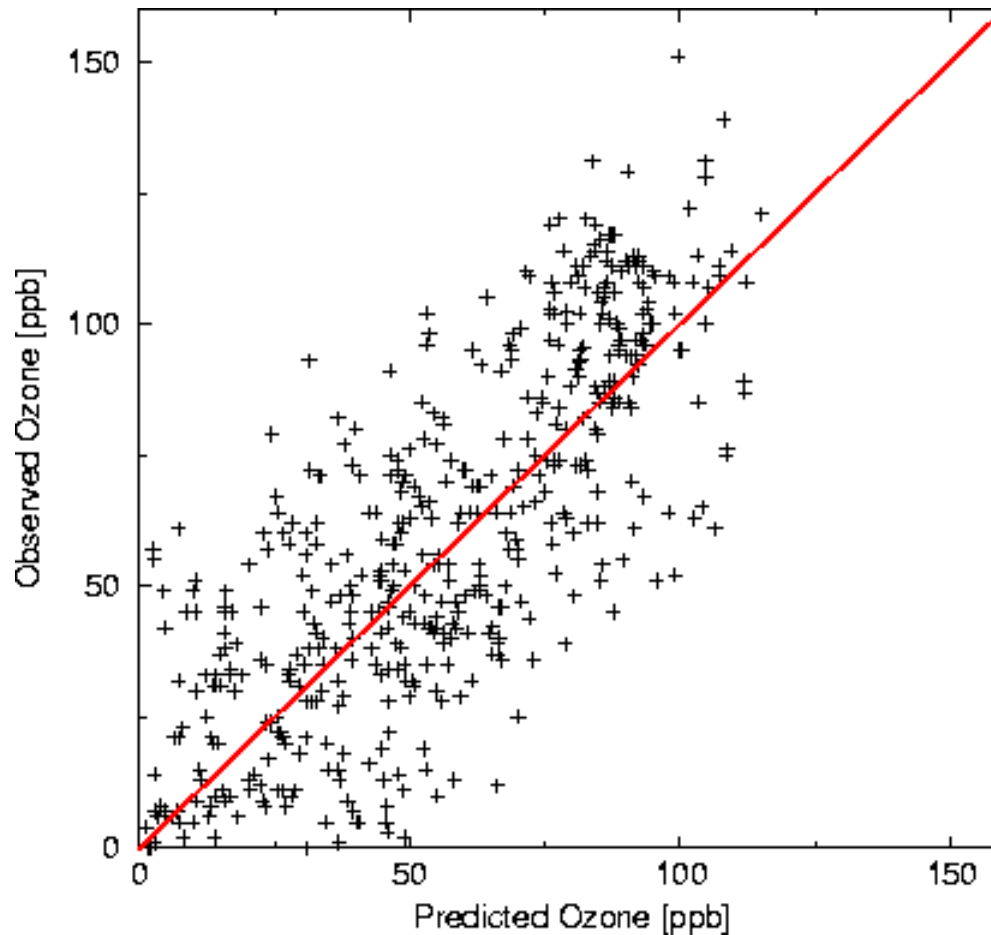
# SAPRC99 simulations (cont.)



Sacramento  
LSM-FDDA  
8/1/2000



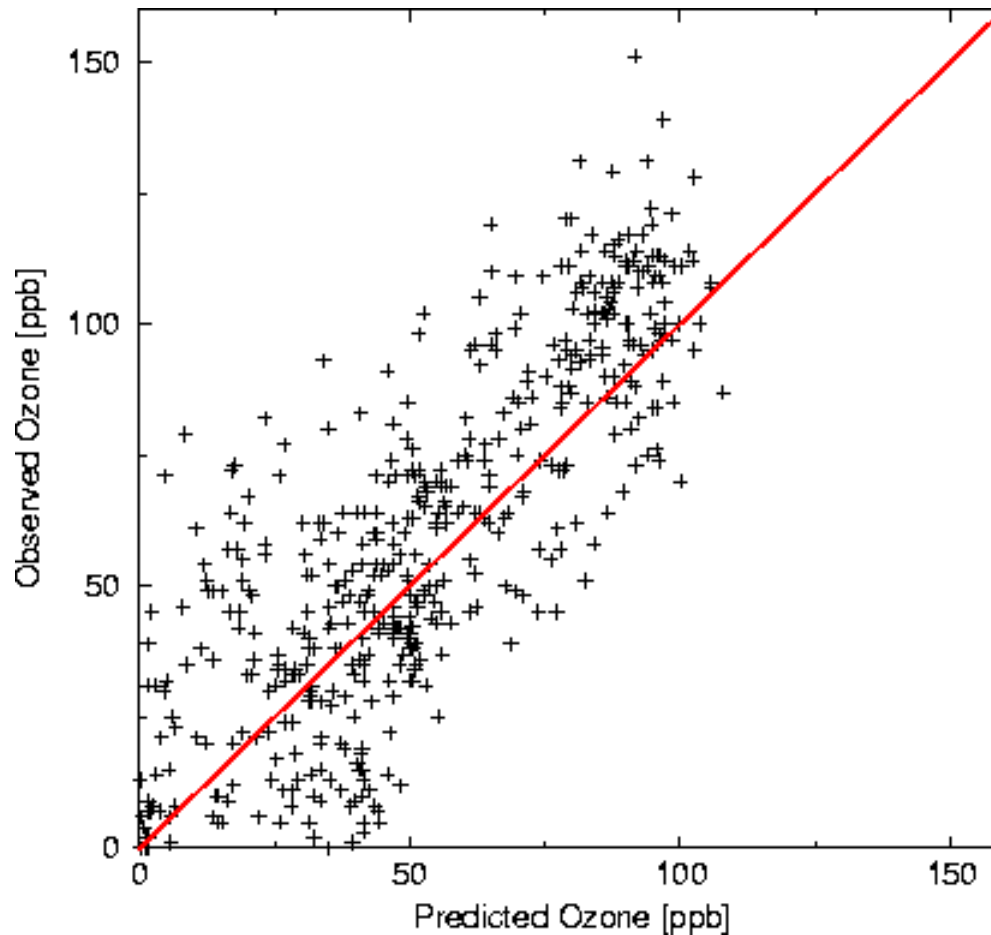
# SAPRC99 simulations (cont.)



SJV  
5-layer soil  
8/2/2000



# SAPRC99 simulations (cont.)



SJV  
LSM – FDDA  
8/2/2000