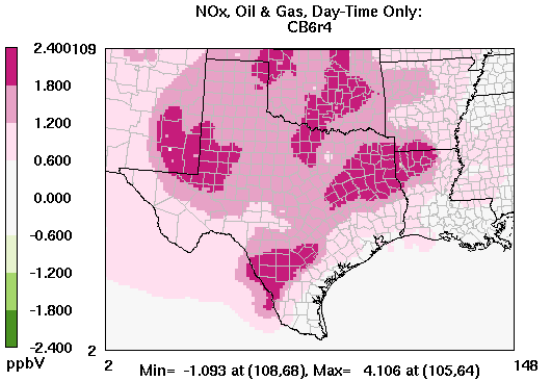
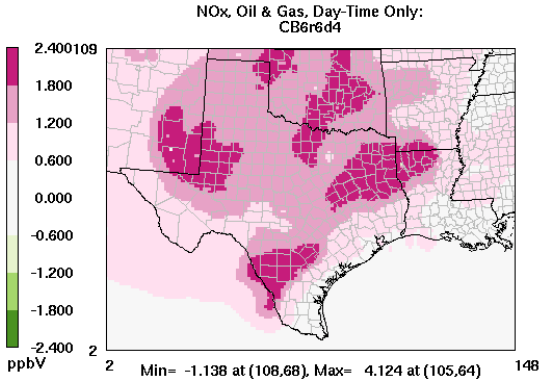
Appendix E

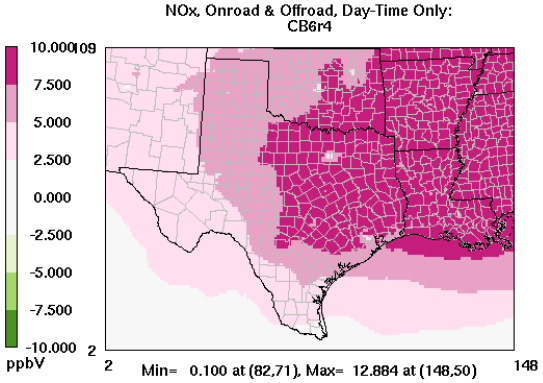
DDM Ozone Sensitivities Averaged Across Daytime Hours

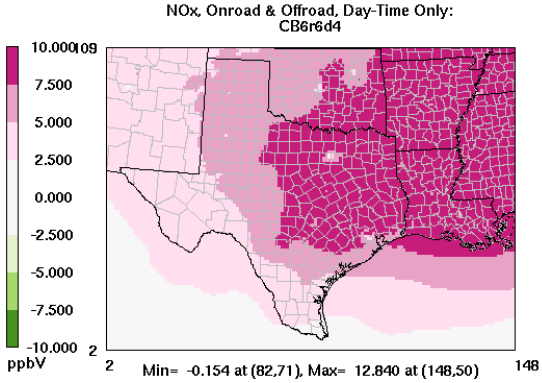
(a)


NOx, Oil & Gas, Day-Time Only:
CB6r4
2.400109
1.800
1.200
0.600
0.000
-0.600
-1.200
-1.800
-2.400
ppbV
2
2
148
Min= -1.093 at (108,68), Max= 4.106 at (105,64)

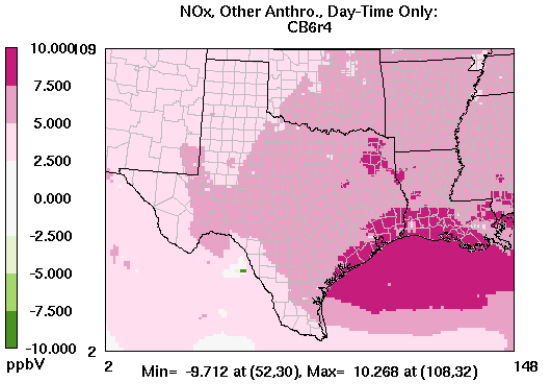

NOx, Oil & Gas, Day-Time Only:
CB6r6d4
2.400109
1.800
1.200
0.600
0.000
-0.600
-1.200
-1.800
-2.400
ppbV
2
2
148
Min= -1.138 at (108,68), Max= 4.124 at (105,64)

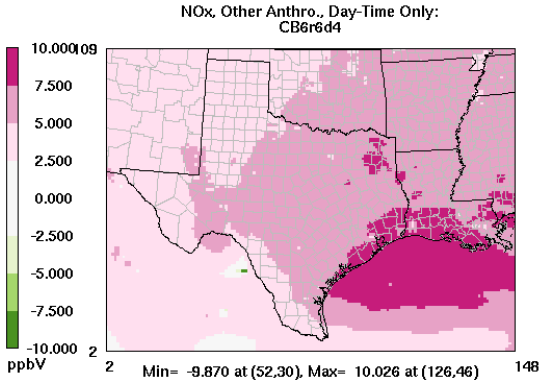
(b)


NOx, Onroad & Offroad, Day-Time Only:
CB6r4
10.000109
7.500
5.000
2.500
0.000
-2.500
-5.000
-7.500
-10.000
ppbV
2
2
148
Min= 0.100 at (82,71), Max= 12.884 at (148,50)

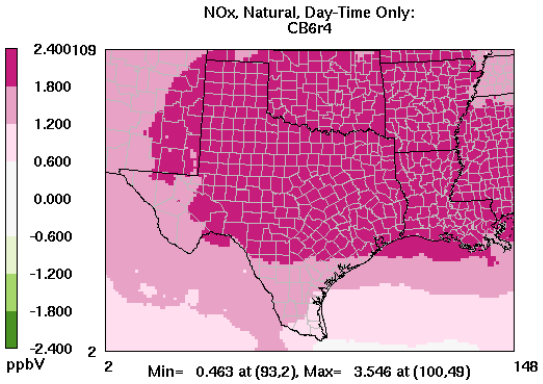

NOx, Onroad & Offroad, Day-Time Only:
CB6r6d4
10.000109
7.500
5.000
2.500
0.000
-2.500
-5.000
-7.500
-10.000
ppbV
2
2
148
Min= -0.154 at (82,71), Max= 12.840 at (148,50)

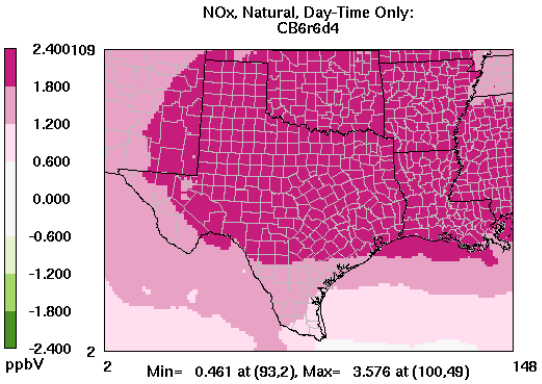
(c)


NOx, Other Anthro., Day-Time Only:
CB6r4
10.000109
7.500
5.000
2.500
0.000
-2.500
-5.000
-7.500
-10.000
ppbV
2
2
148
Min= -9.712 at (52,30), Max= 10.268 at (108,32)

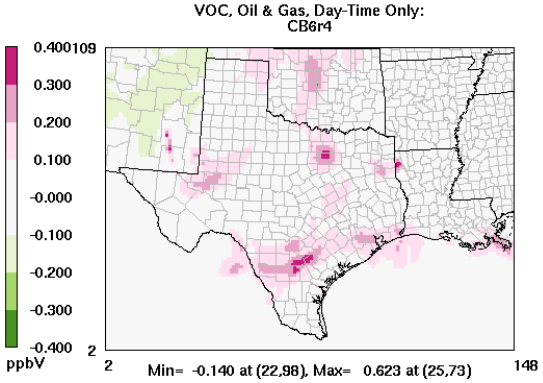

NOx, Other Anthro., Day-Time Only:
CB6r6d4
10.000109
7.500
5.000
2.500
0.000
-2.500
-5.000
-7.500
-10.000
ppbV
2
2
148
Min= -9.870 at (52,30), Max= 10.026 at (126,46)

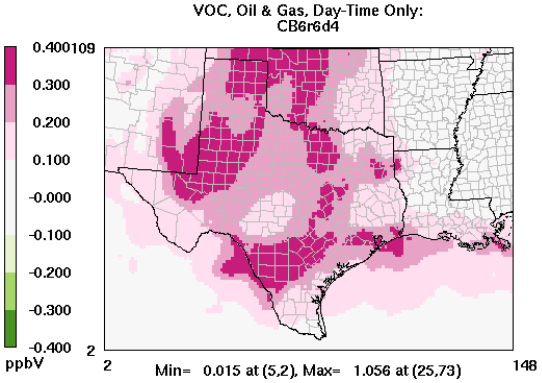
(d)


NOx, Natural, Day-Time Only:
CB6r4
2.400109
1.800
1.200
0.600
0.000
-0.600
-1.200
-1.800
-2.400
ppbV
2
2
Min= 0.463 at (93,2), Max= 3.546 at (100,49)
148

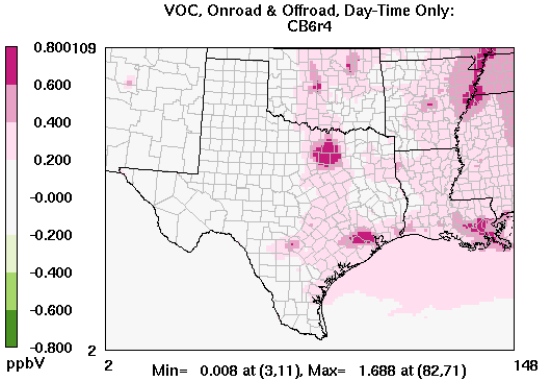

NOx, Natural, Day-Time Only:
CB6r6d4
2.400109
1.800
1.200
0.600
0.000
-0.600
-1.200
-1.800
-2.400
ppbV
2
2
Min= 0.461 at (93,2), Max= 3.576 at (100,49)
148

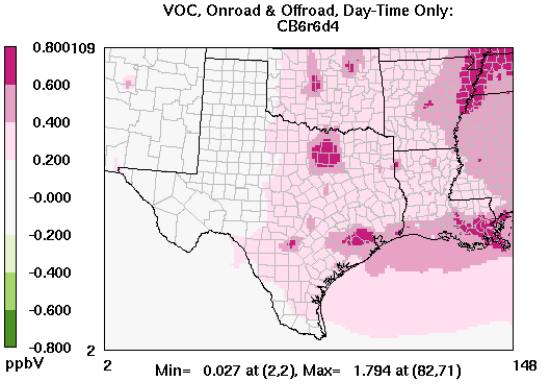
(e)


VOC, Oil & Gas, Day-Time Only:
CB6r4
0.400109
0.300
0.200
0.100
-0.000
-0.100
-0.200
-0.300
-0.400
ppbV
2
2
Min= -0.140 at (22,98), Max= 0.623 at (25,73)
148

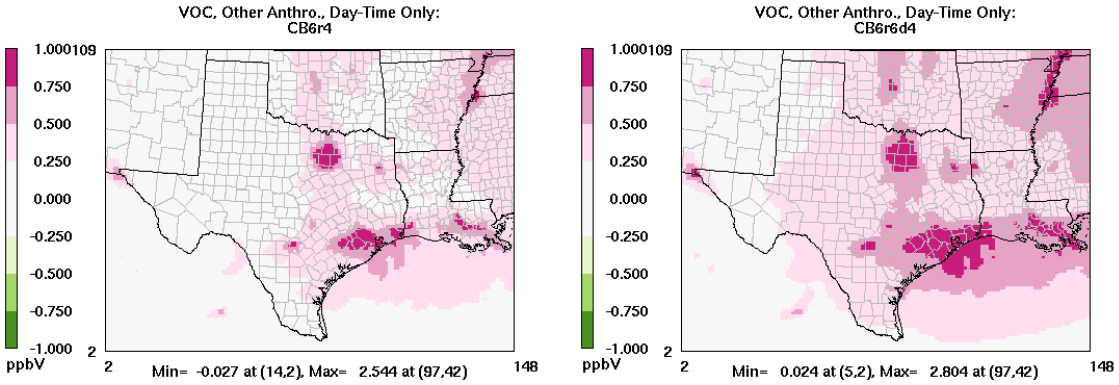

VOC, Oil & Gas, Day-Time Only:
CB6r6d4
0.400109
0.300
0.200
0.100
-0.000
-0.100
-0.200
-0.300
-0.400
ppbV
2
2
Min= 0.015 at (5,2), Max= 1.056 at (25,73)
148

(f)


VOC, Onroad & Offroad, Day-Time Only:
CB6r4
0.800109
0.600
0.400
0.200
-0.000
-0.200
-0.400
-0.600
-0.800
ppbV
2
2
Min= 0.008 at (3,11), Max= 1.688 at (82,71)
148


VOC, Onroad & Offroad, Day-Time Only:
CB6r6d4
0.800109
0.600
0.400
0.200
-0.000
-0.200
-0.400
-0.600
-0.800
ppbV
2
2
Min= 0.027 at (2,2), Max= 1.794 at (82,71)
148

(g)



(h)

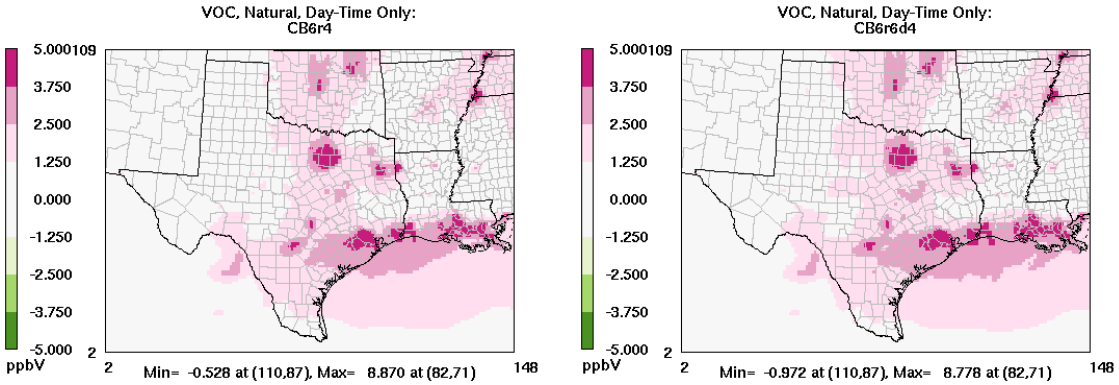
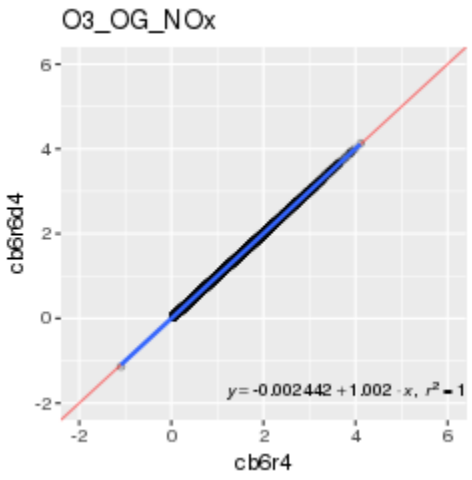
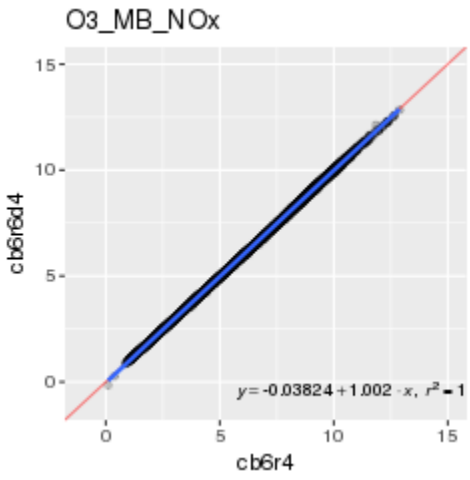


Figure E-1. Daytime (defined as 1000-1800 local time) DDM ozone sensitivity to NOx or VOC emissions by source sector for the base case (left) and for CAMx with the CB6r6d4 mechanism (right): (a) oil and gas NO_x, (b) on-road and non-road mobile NO_x, (c) other anthropogenic NO_x, (d) natural NO_x, (e) oil and gas VOC, (f) on-road and non-road mobile VOC, (g) other anthropogenic VOC, and (h) natural VOC. Note differences in scales between plots.

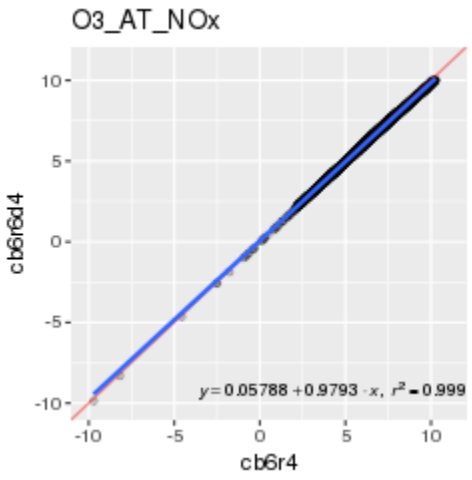
(a)


O3_OG_NOx
cb6r6d4
cb6r4
y = -0.002442 + 1.002 · x, r² = 1

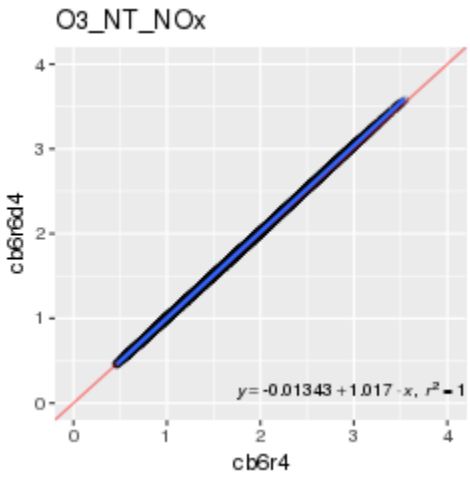
(b)


O3_MB_NOx
cb6r6d4
cb6r4
y = -0.03824 + 1.002 · x, r² = 1

(c)


O3_AT_NOx
cb6r6d4
cb6r4
y = 0.05788 + 0.9793 · x, r² = 0.999

(d)


O3_NT_NOx
cb6r6d4
cb6r4
y = -0.01343 + 1.017 · x, r² = 1

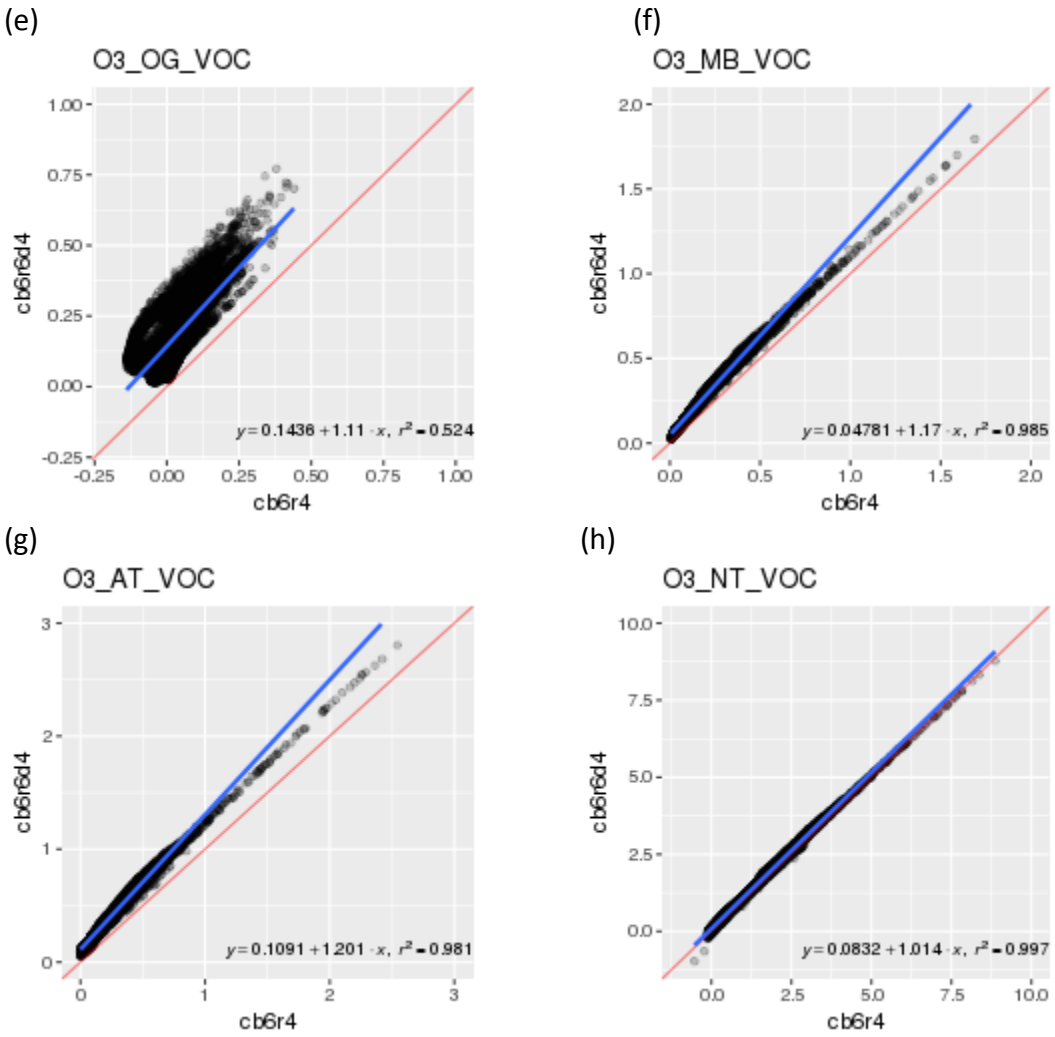


Figure E-2. Scatter plots of daytime (defined as 1000-1800 local time) DDM ozone sensitivities to NO_x or VOC emissions by source sector for CAMx with the CB6r6d4 mechanism versus the base case (CB6r4 mechanism): (a) oil and gas NO_x, (b) on-road and non-road mobile NO_x, (c) other anthropogenic NO_x, (d) natural NO_x, (e) oil and gas VOC, (f) on-road and non-road mobile VOC, (g) other anthropogenic VOC, and (h) natural VOC. The linear regression (blue) and 1:1 (red) lines are shown. Note differences in scales between plots.