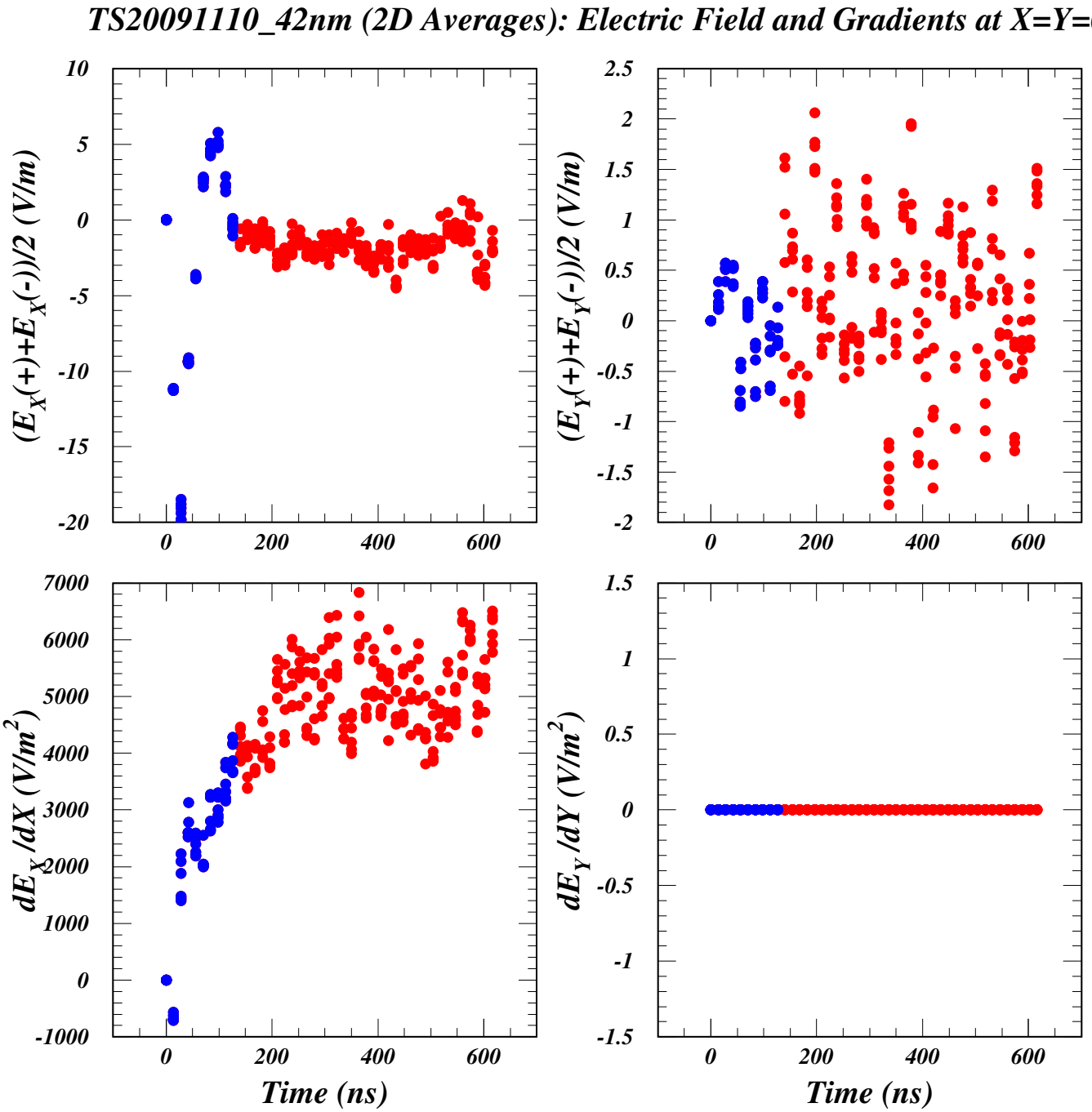
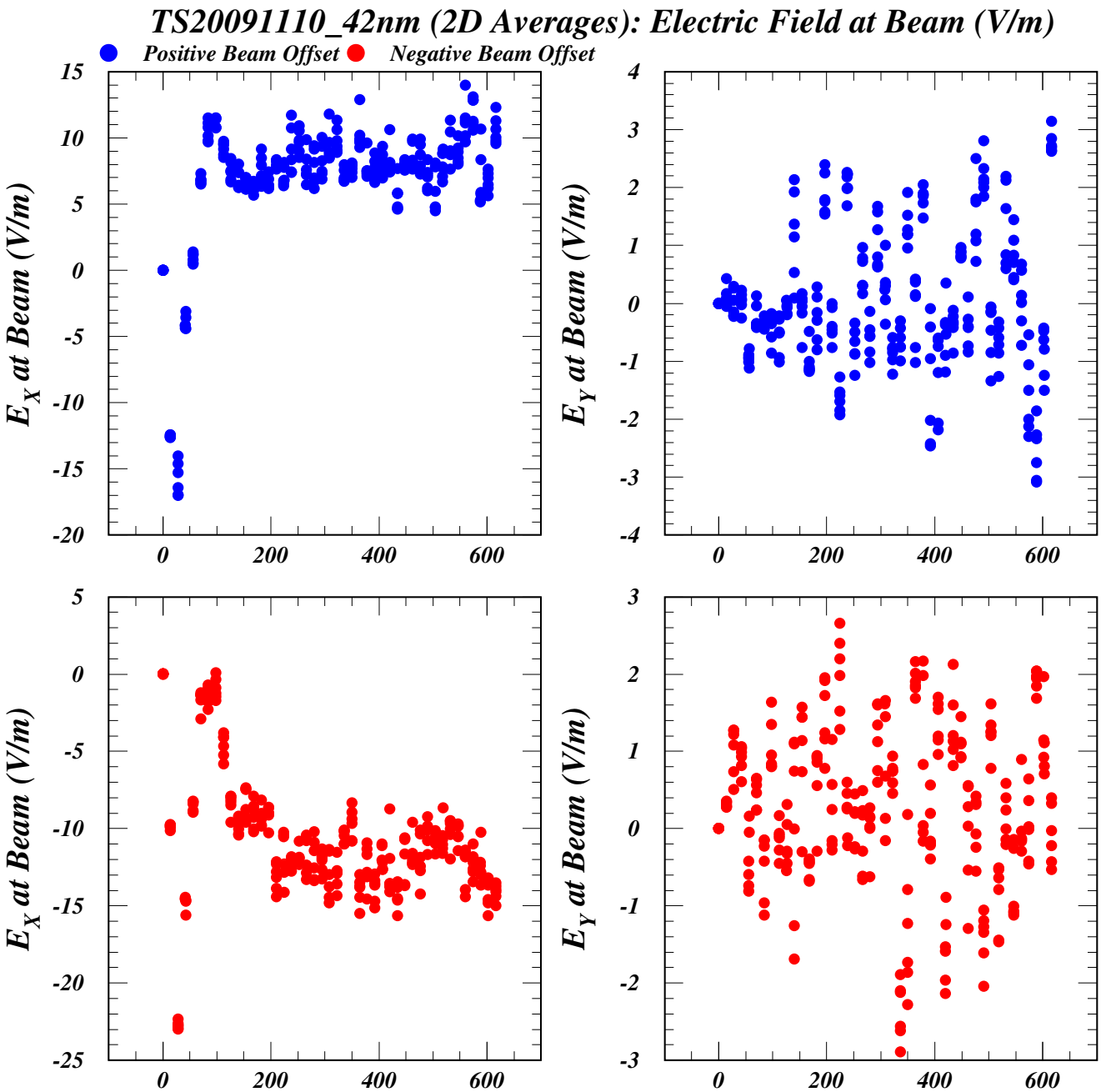
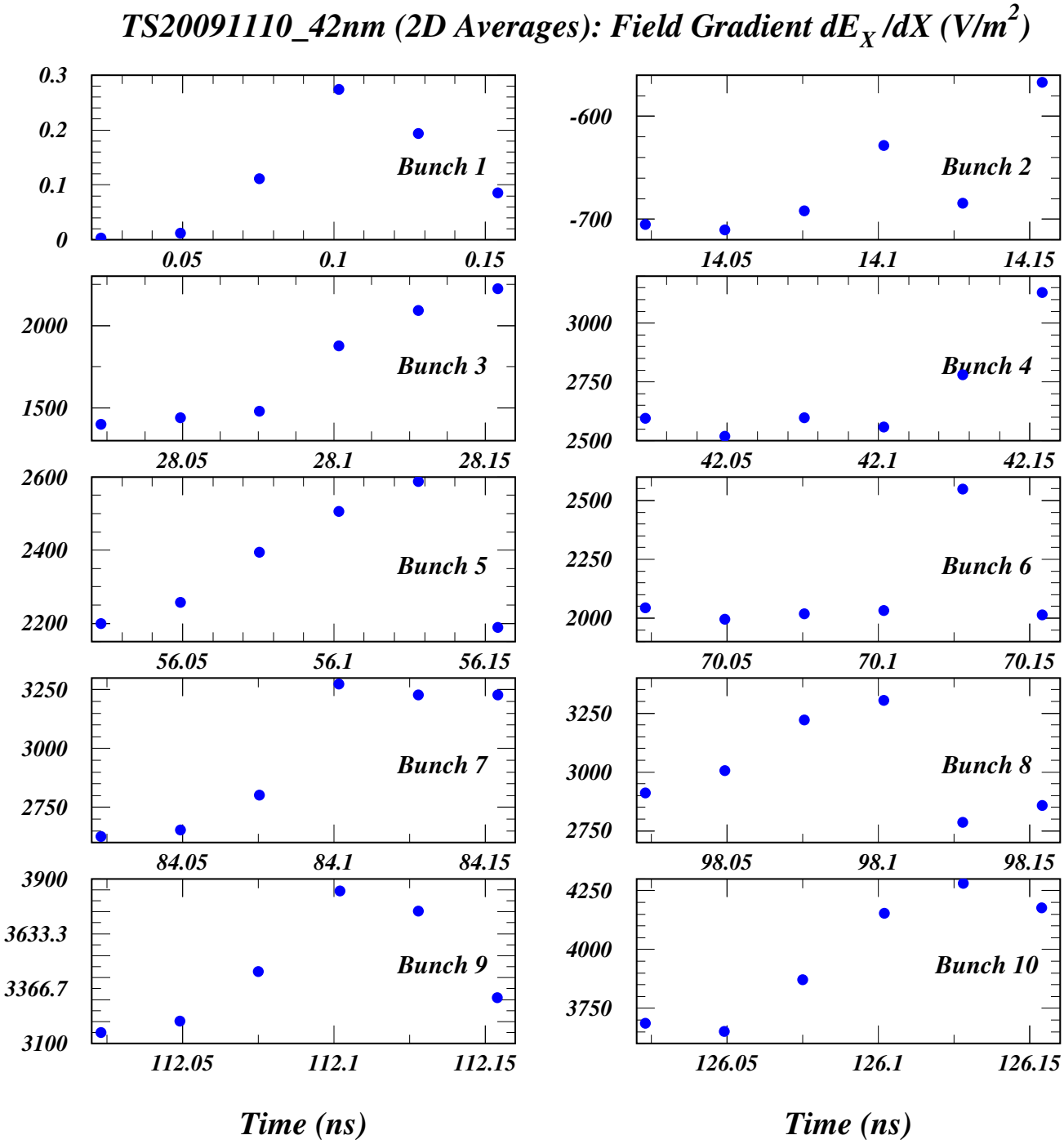
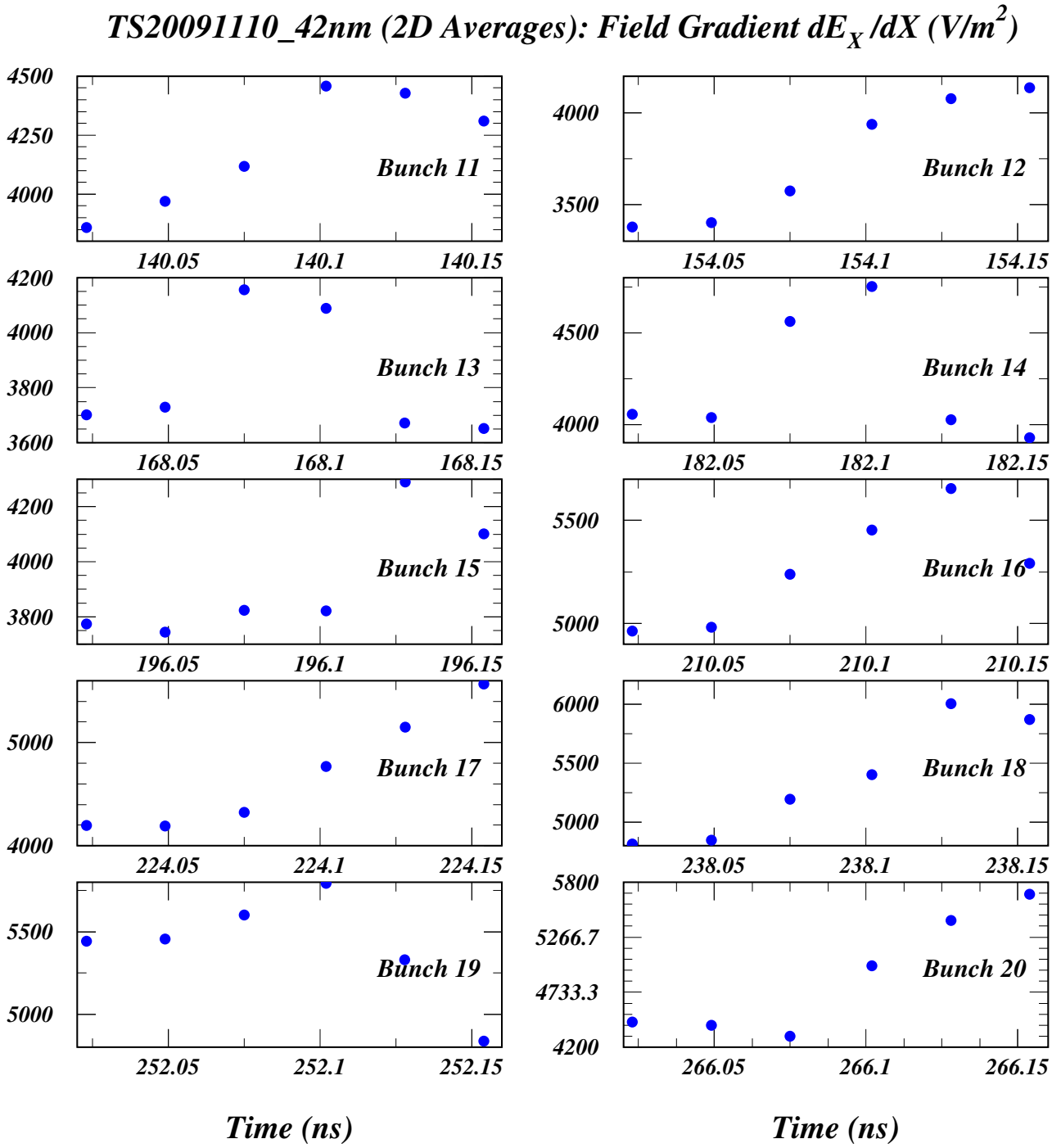
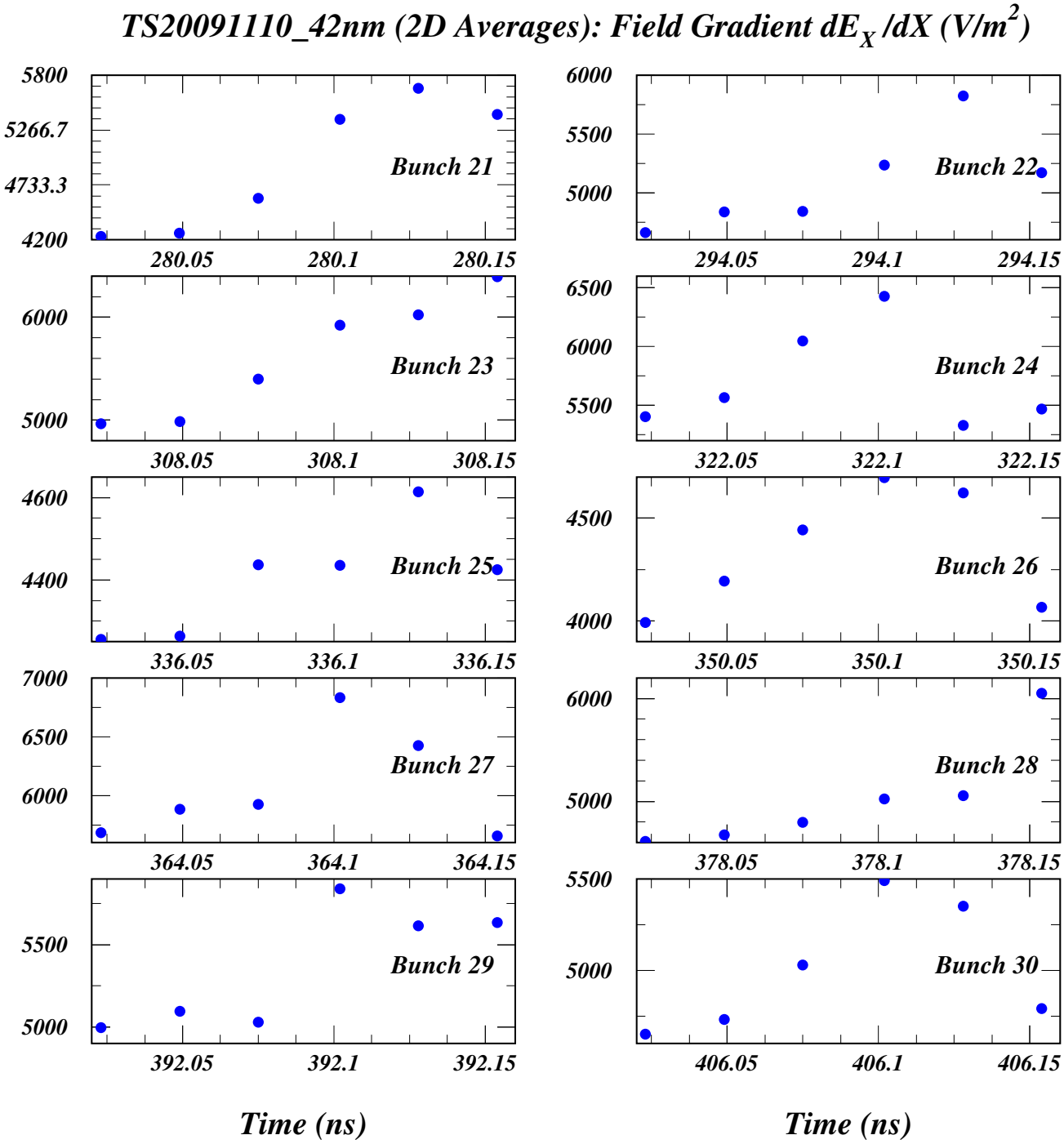
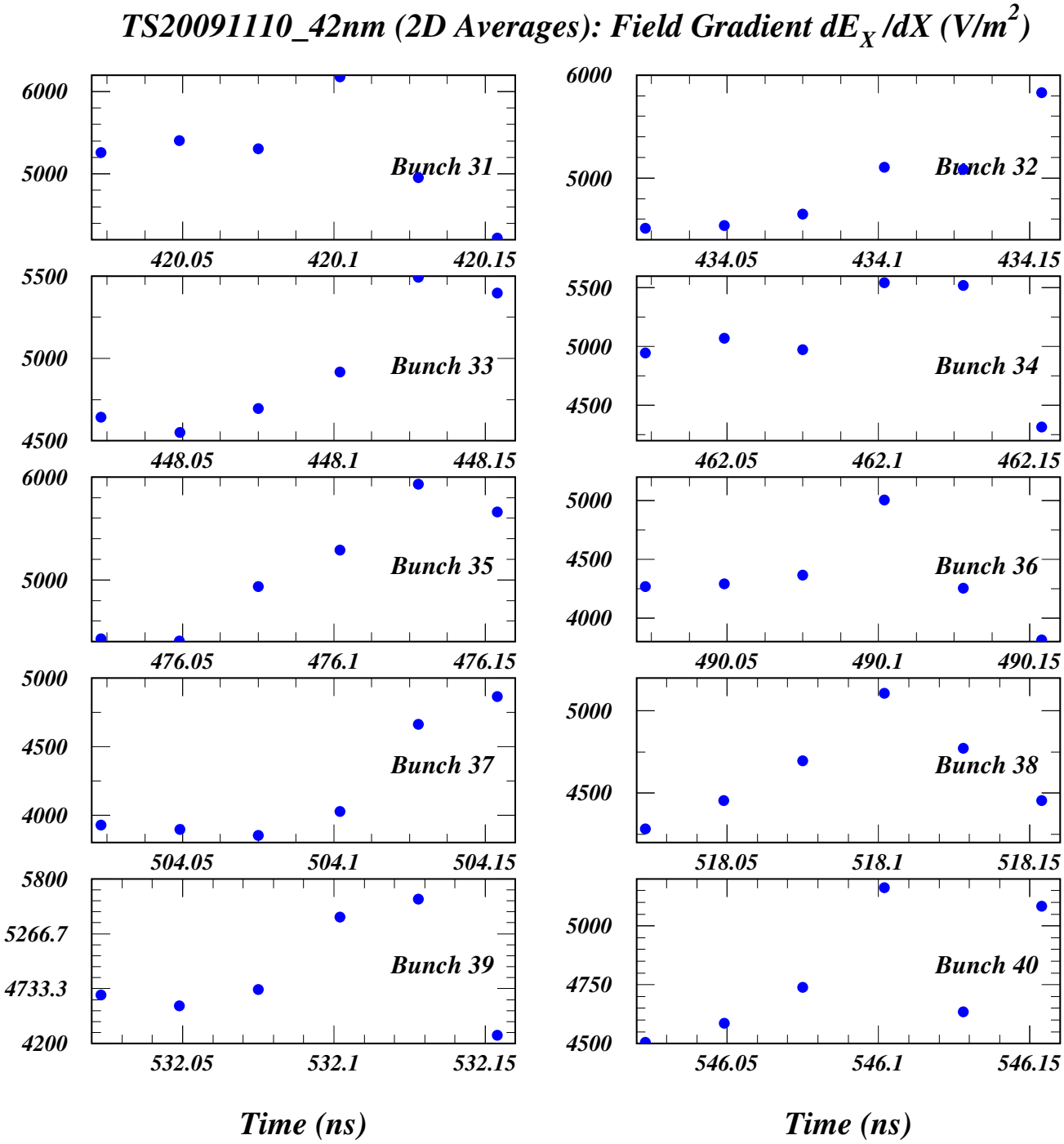

TS20091110_42nm (2D Averages): Electric Field and Gradients at X=Y=0
(E_X(+)+E_X(-))/2 (V/m)
(E_Y(+)+E_Y(-))/2 (V/m)
dE_X/dX (V/m^2)
dE_Y/dY (V/m^2)
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Electric Field at Beam (V/m)
Positive Beam Offset
Negative Beam Offset
E_X at Beam (V/m)
E_Y at Beam (V/m)
E_X at Beam (V/m)
E_Y at Beam (V/m)

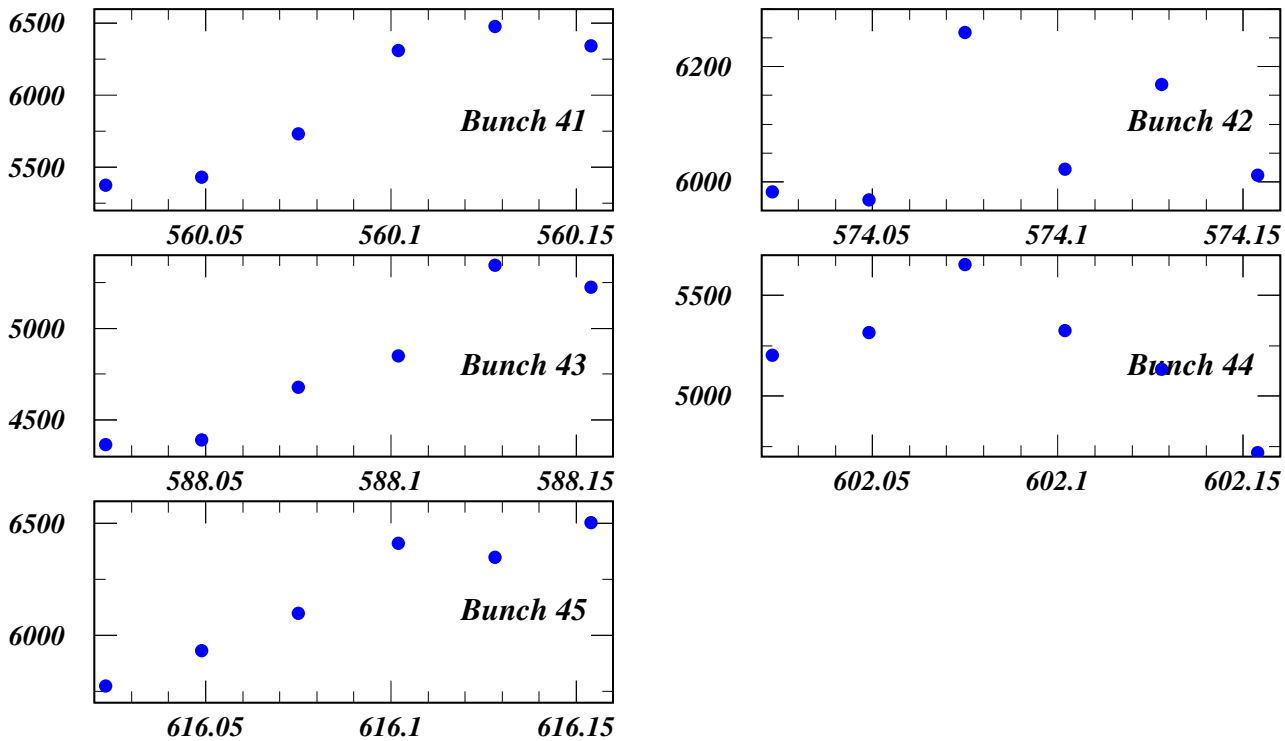

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
0.3
0.2
0.1
0
0.05
0.1
0.15
-600
-700
14.05
14.1
14.15
2000
1500
28.05
28.1
28.15
3000
2750
2500
42.05
42.1
42.15
2600
2400
2200
56.05
56.1
56.15
2500
2250
2000
70.05
70.1
70.15
3250
3000
2750
84.05
84.1
84.15
3250
3000
2750
98.05
98.1
98.15
3900
3633.3
3366.7
3100
112.05
112.1
112.15
4250
4000
3750
126.05
126.1
126.15
Time (ns)
Time (ns)

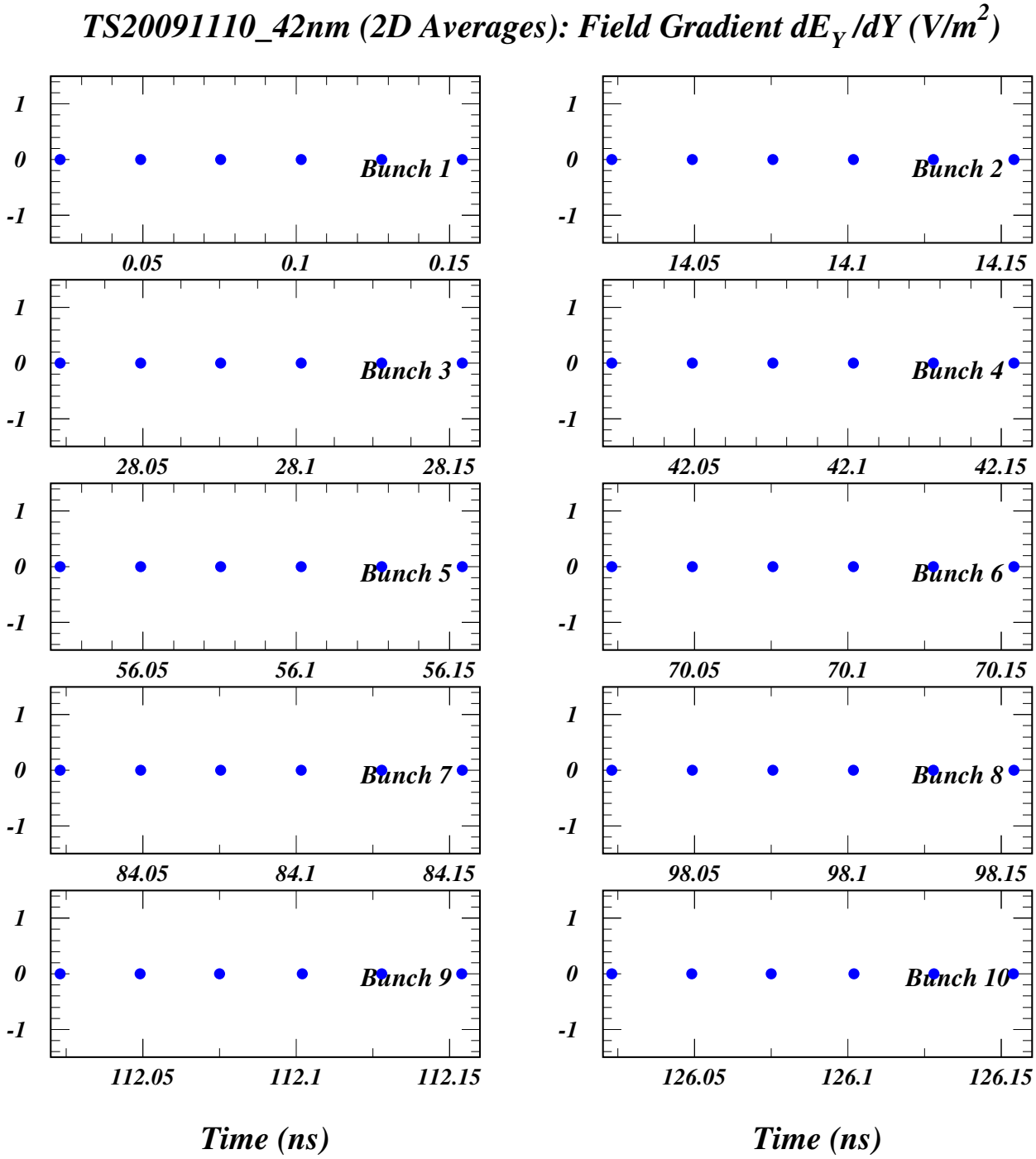

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
Time (ns)
Time (ns)

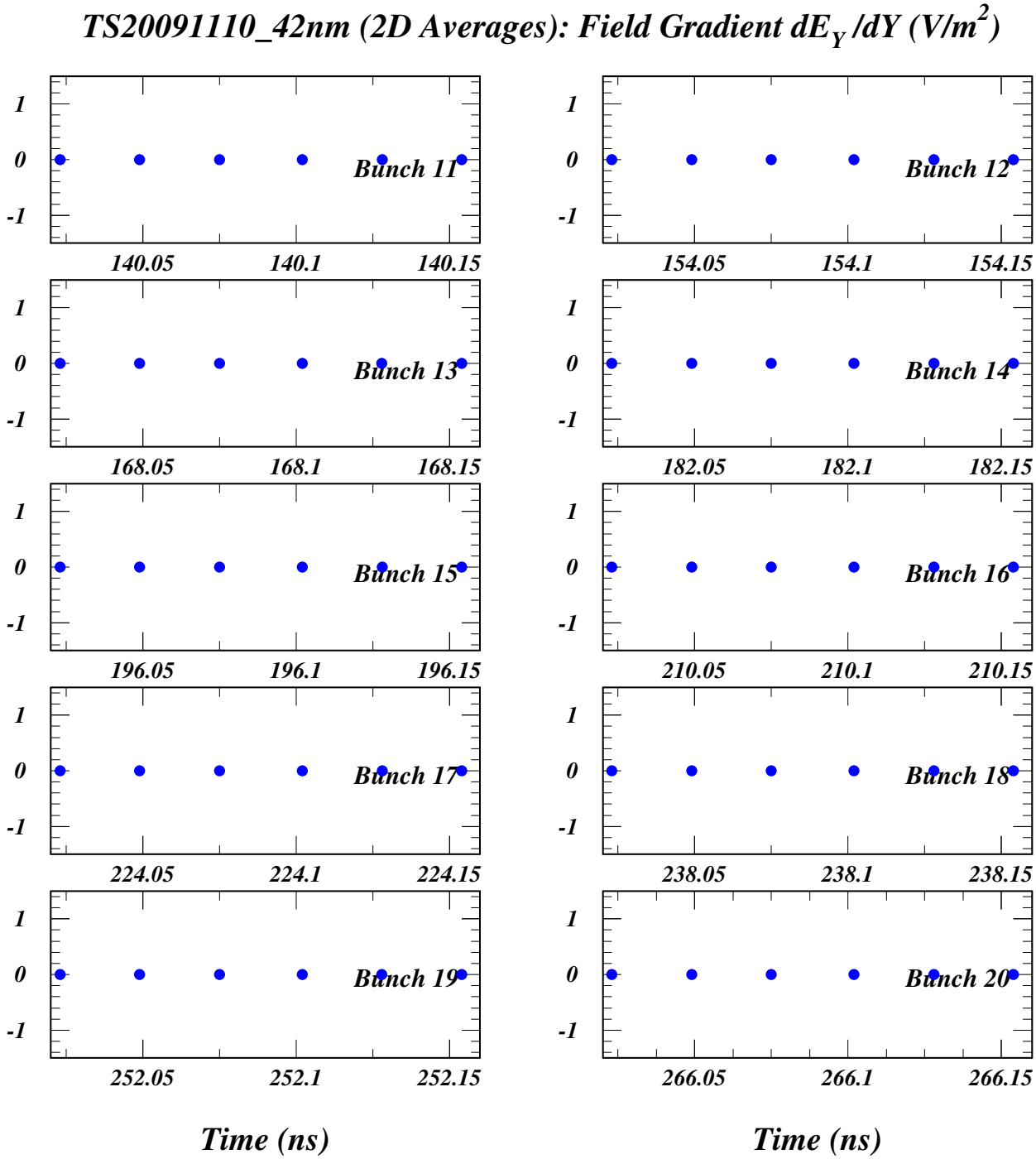

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
Time (ns)
Time (ns)

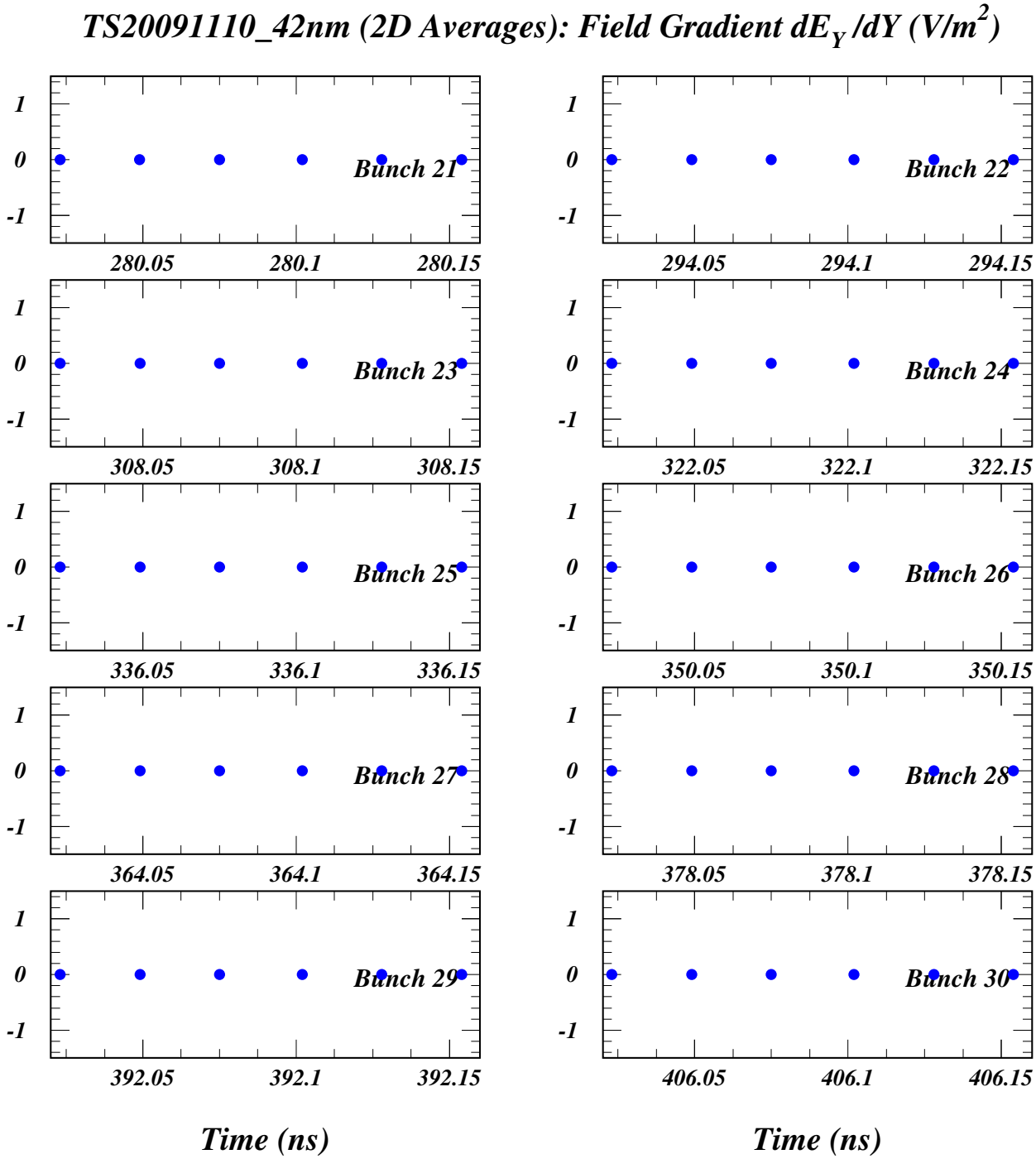

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
Time (ns)
Time (ns)

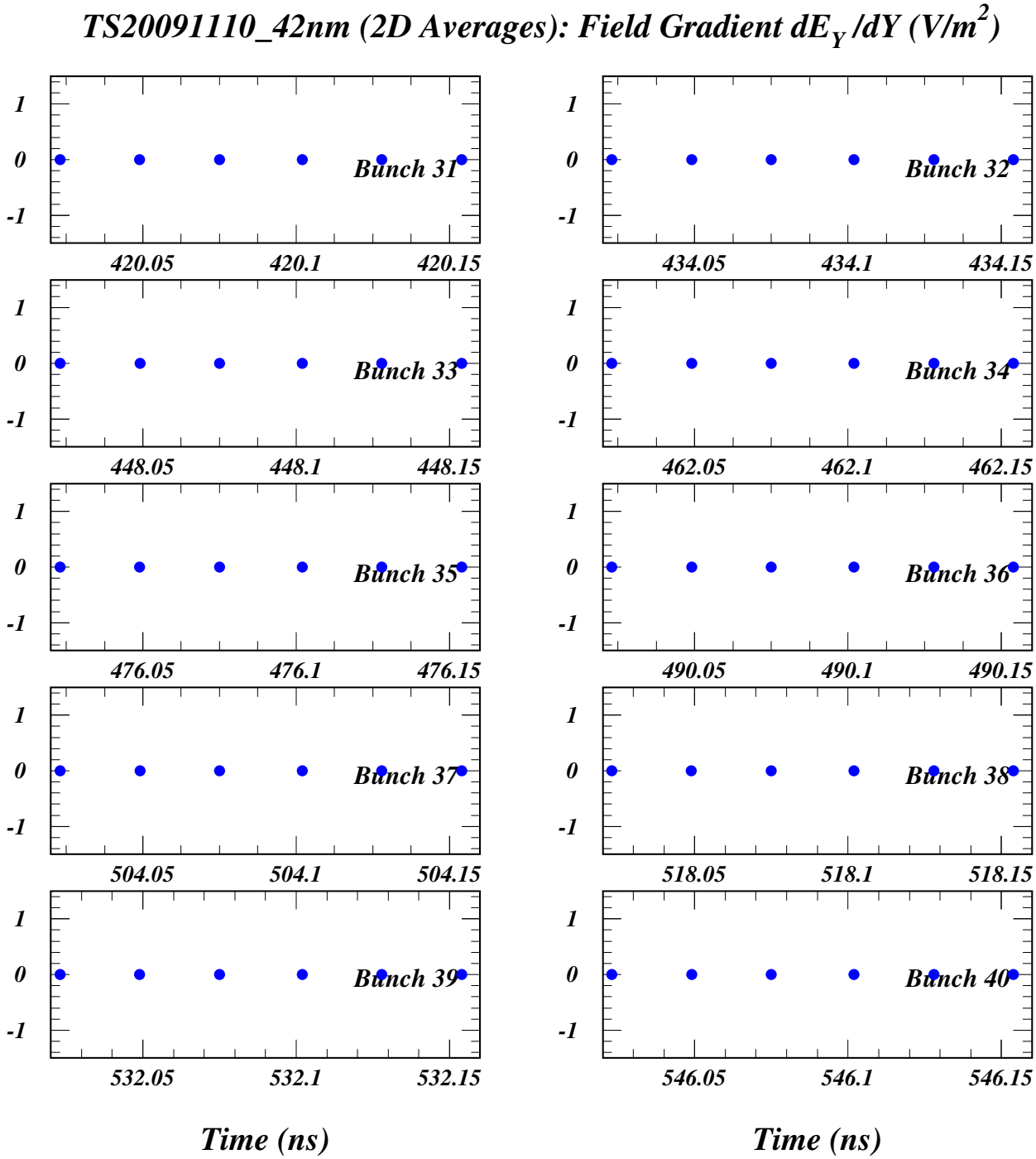
TS20091110_42nm (2D Averages): Field Gradient dE_X/dX (V/m^2)



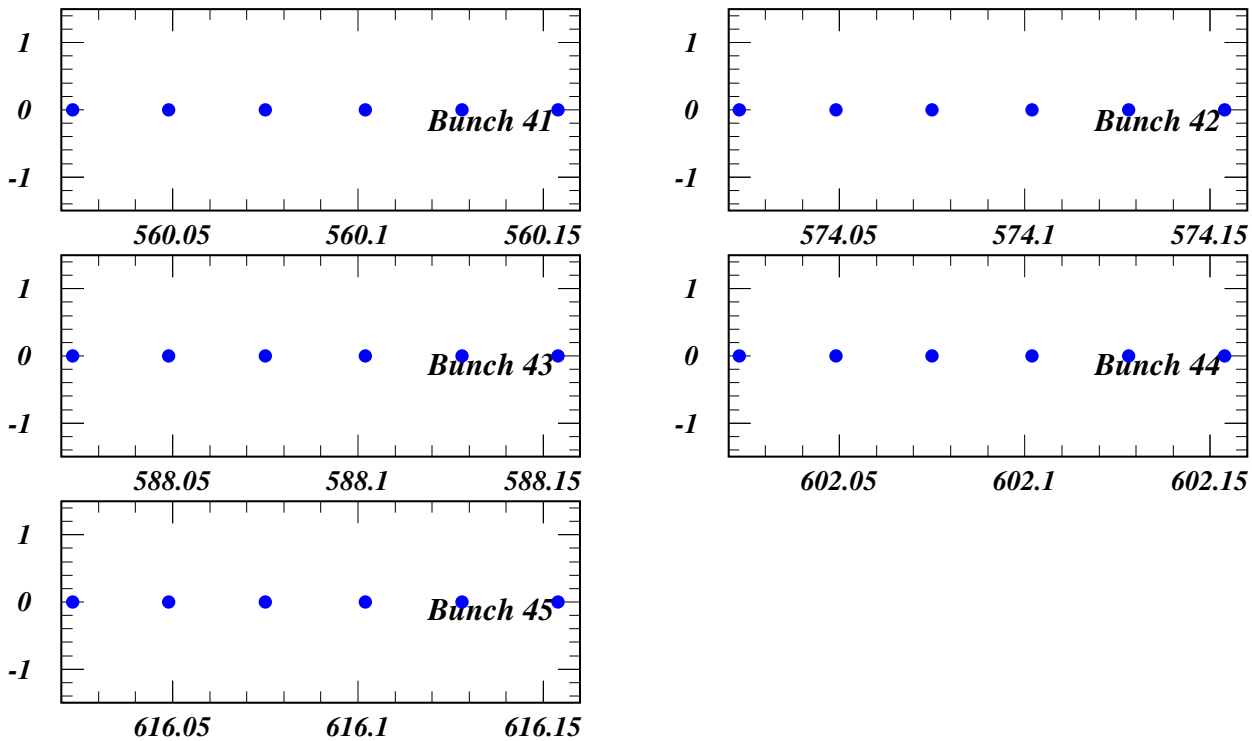

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
1
0
-1
0.05
0.1
0.15
14.05
14.1
14.15
28.05
28.1
28.15
42.05
42.1
42.15
56.05
56.1
56.15
70.05
70.1
70.15
84.05
84.1
84.15
98.05
98.1
98.15
112.05
112.1
112.15
126.05
126.1
126.15
Time (ns)
Time (ns)

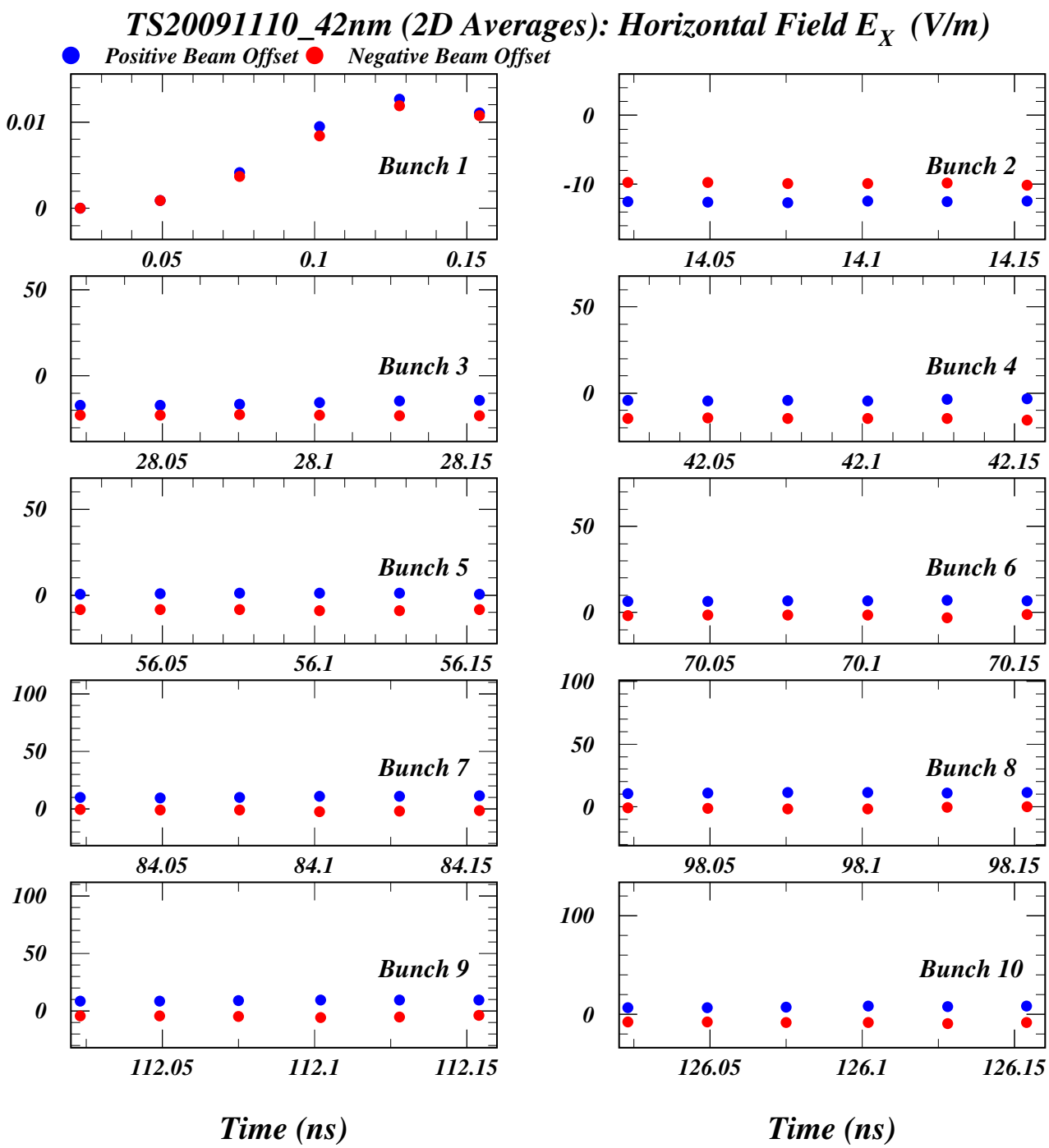

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
1
0
-1
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)

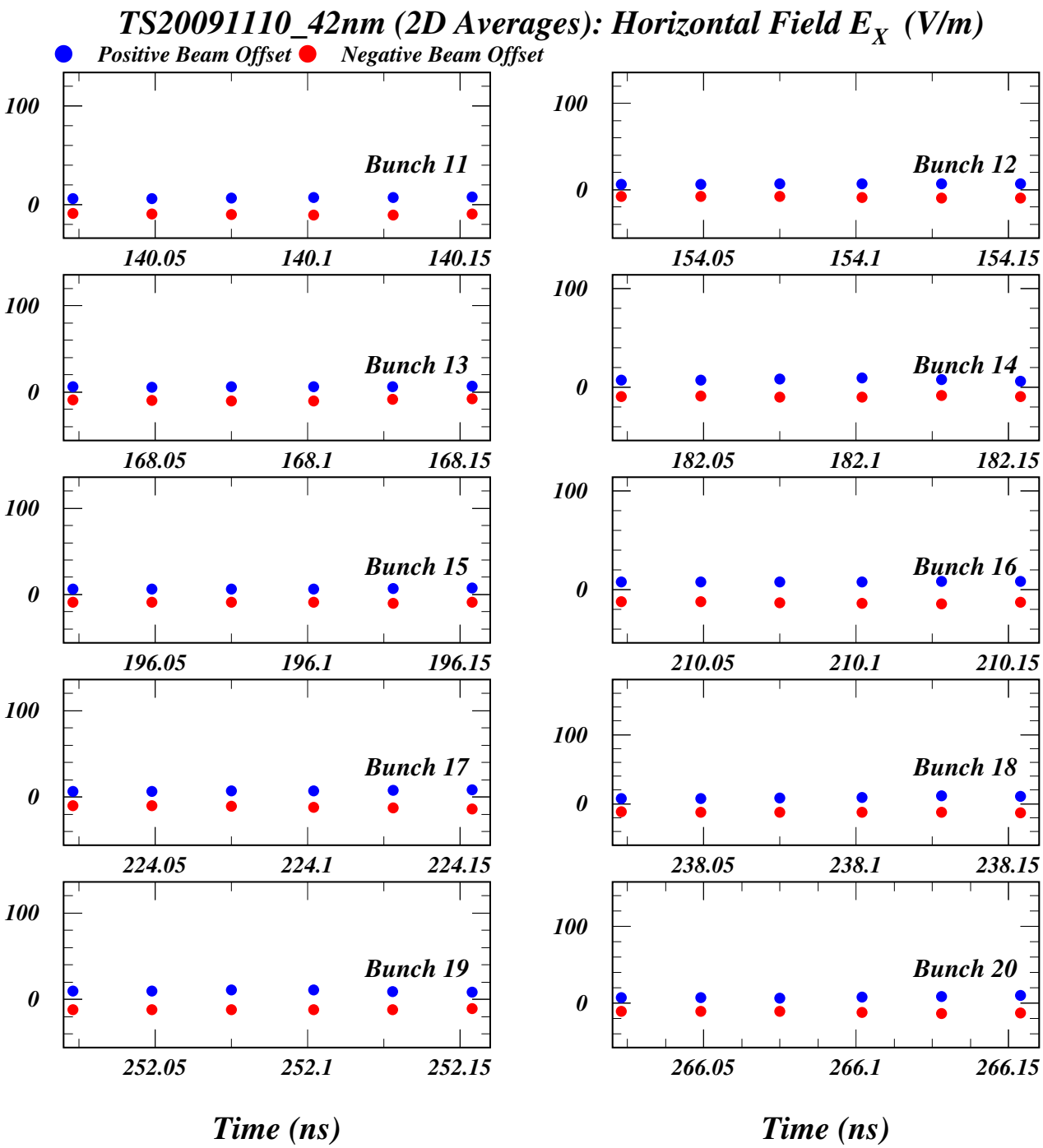

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
1
0
-1
280.05
280.1
280.15
294.05
294.1
294.15
308.05
308.1
308.15
322.05
322.1
322.15
336.05
336.1
336.15
350.05
350.1
350.15
364.05
364.1
364.15
378.05
378.1
378.15
392.05
392.1
392.15
406.05
406.1
406.15
Time (ns)
Time (ns)

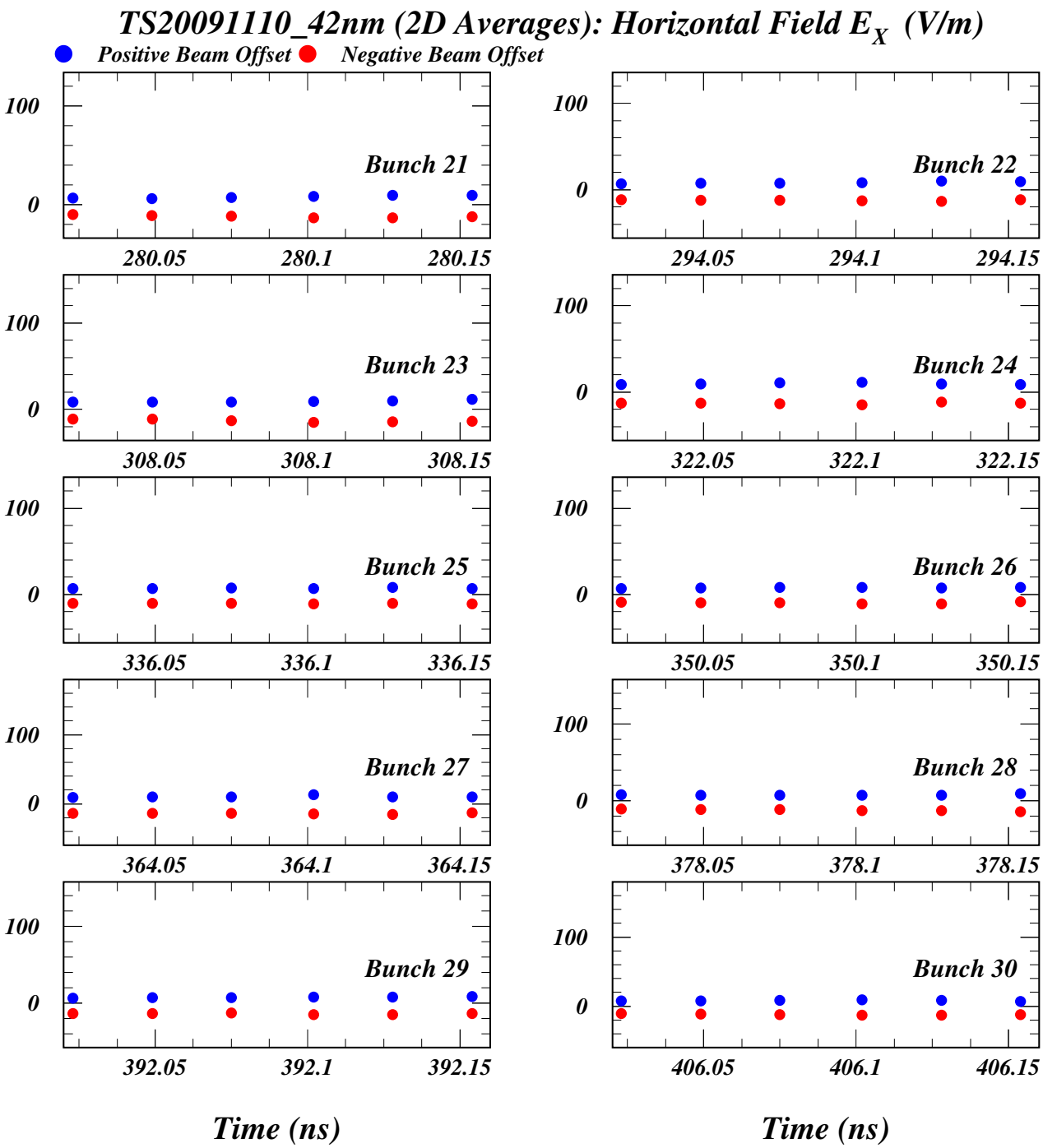

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
1
0
-1
420.05
420.1
420.15
434.05
434.1
434.15
448.05
448.1
448.15
462.05
462.1
462.15
476.05
476.1
476.15
490.05
490.1
490.15
504.05
504.1
504.15
518.05
518.1
518.15
532.05
532.1
532.15
546.05
546.1
546.15
Time (ns)
Time (ns)

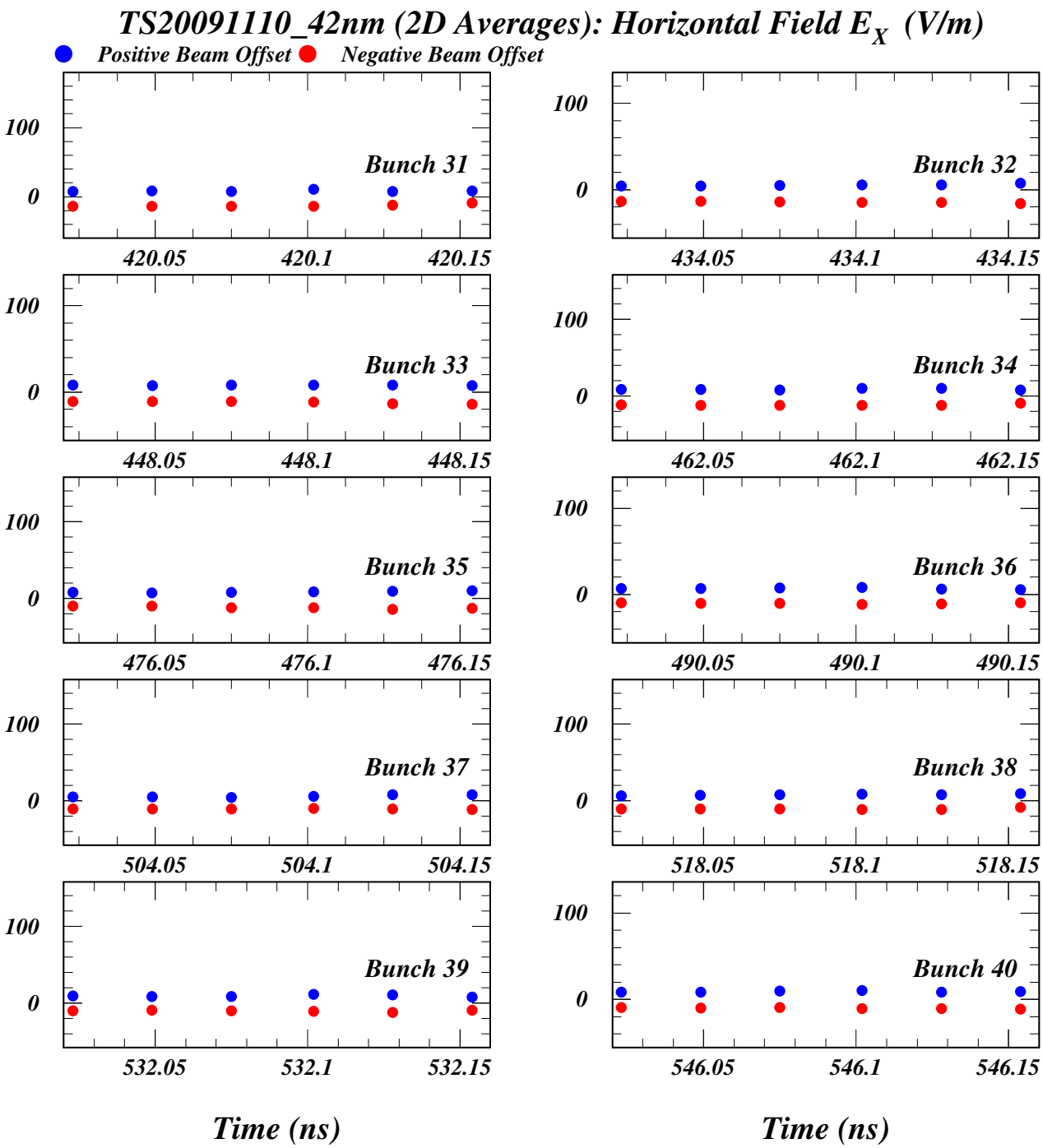
TS20091110_42nm (2D Averages): Field Gradient dE_Y/dY (V/m^2)

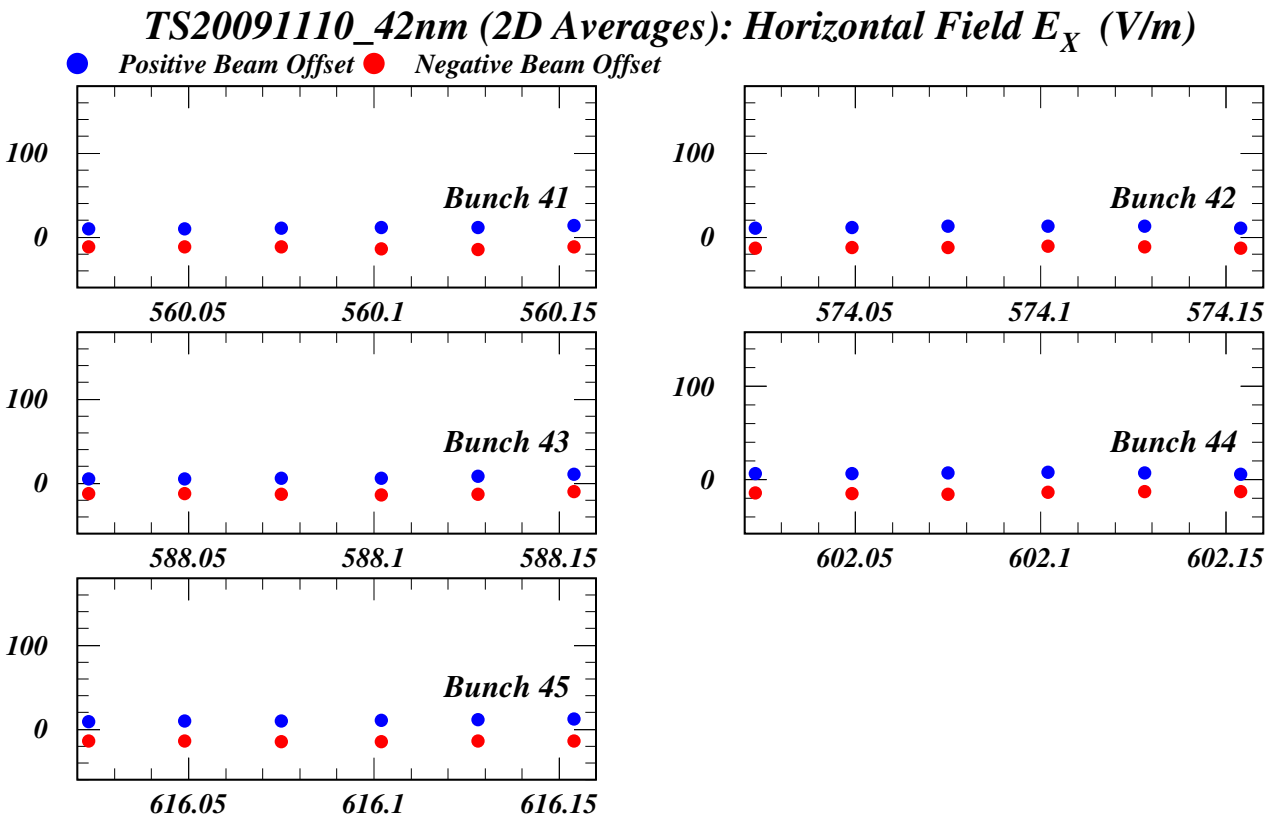


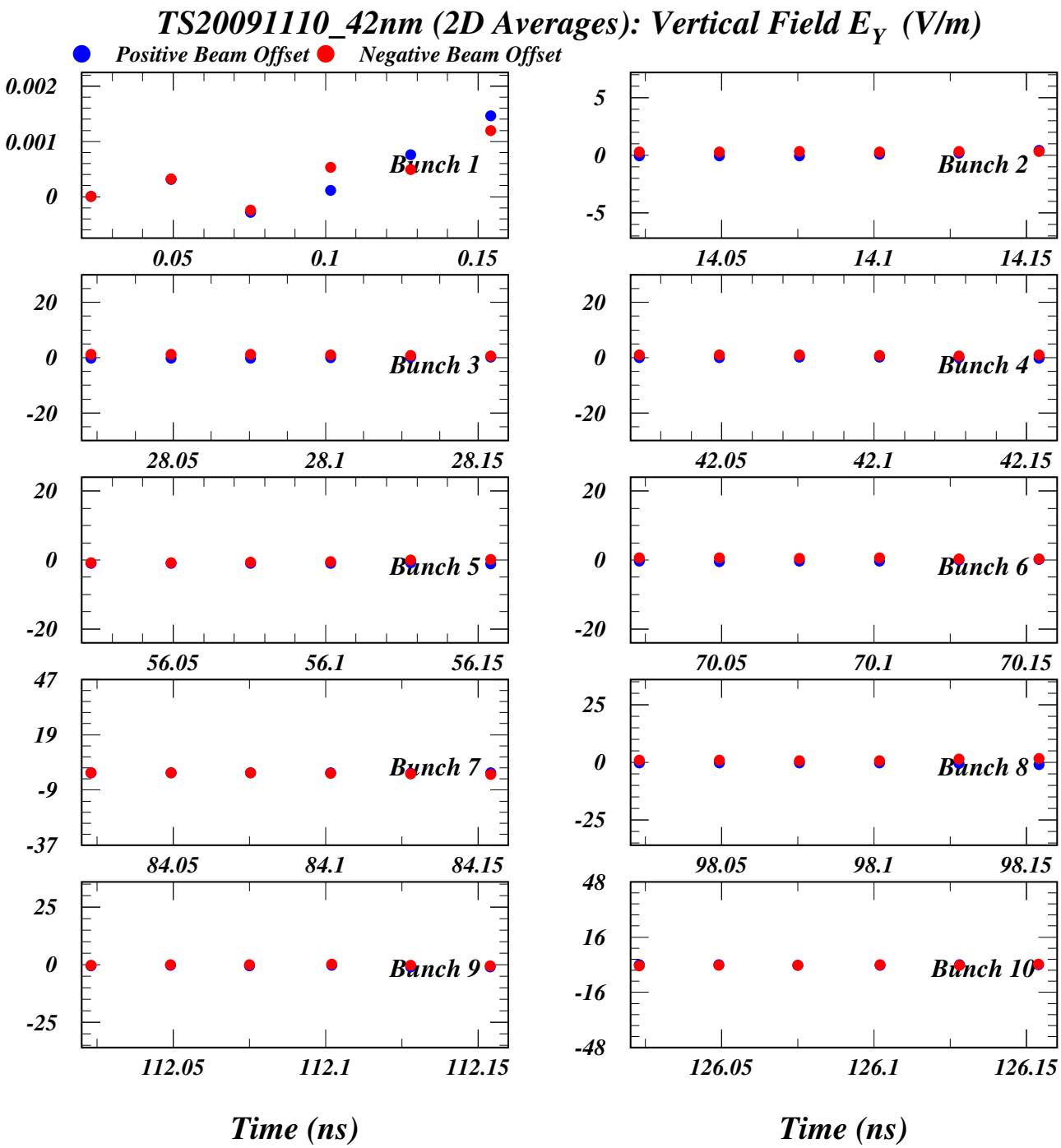

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
0.01
0
-10
50
100
0.05
0.1
0.15
14.05
14.1
14.15
28.05
28.1
28.15
42.05
42.1
42.15
56.05
56.1
56.15
70.05
70.1
70.15
84.05
84.1
84.15
98.05
98.1
98.15
112.05
112.1
112.15
126.05
126.1
126.15
Time (ns)
Time (ns)

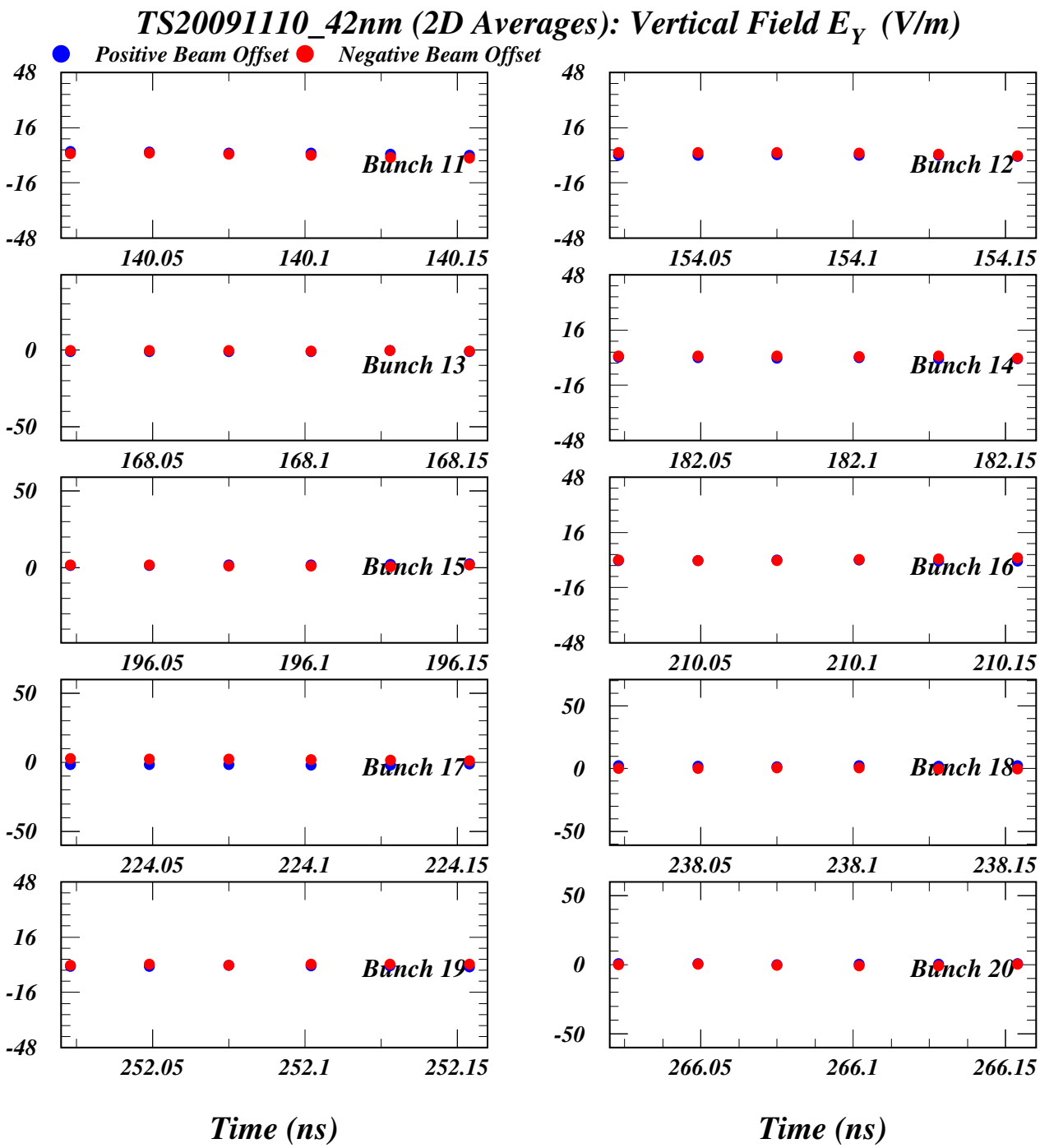

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
100
0
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)

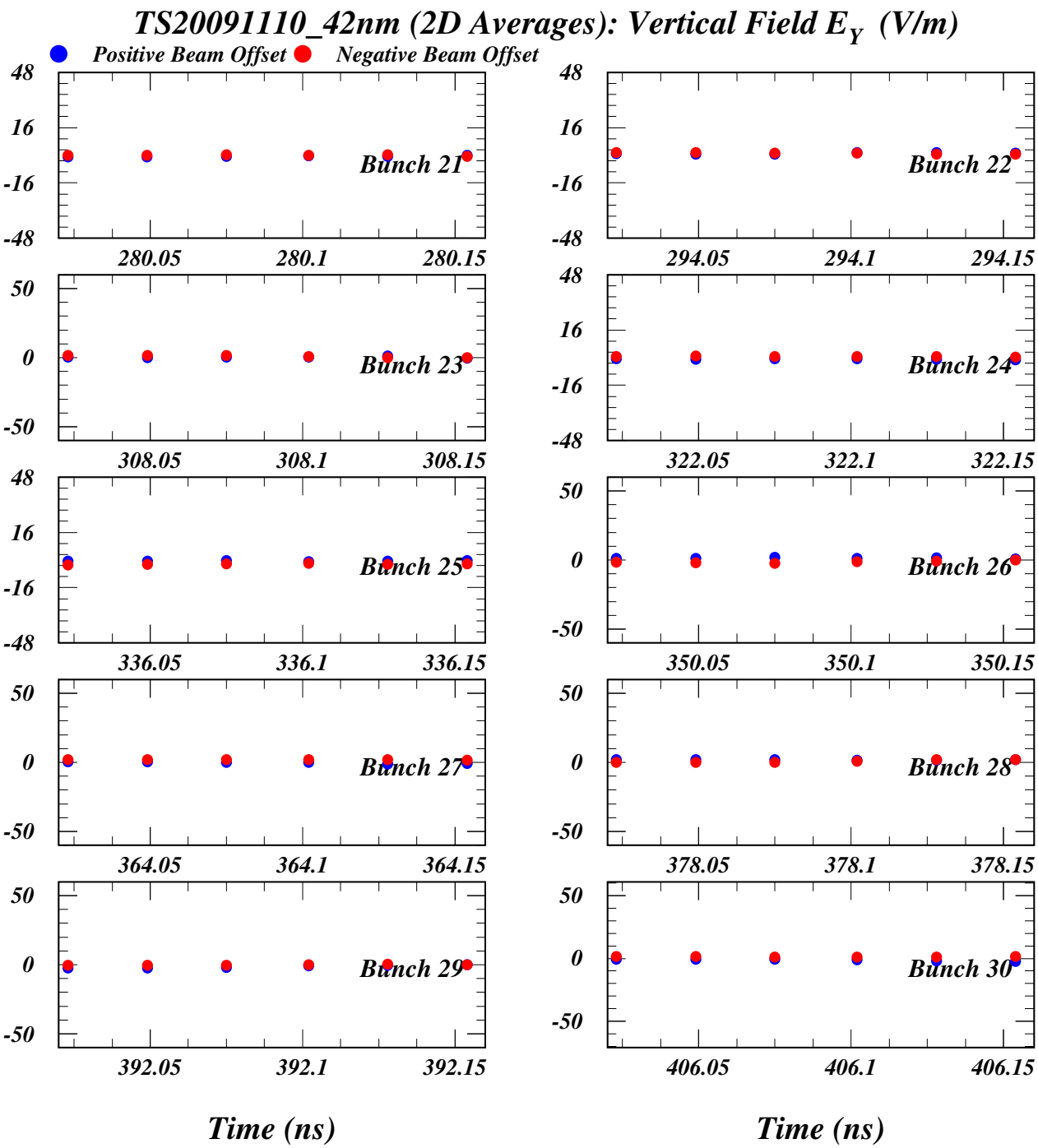

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
100
0
280.05
280.1
280.15
294.05
294.1
294.15
308.05
308.1
308.15
322.05
322.1
322.15
336.05
336.1
336.15
350.05
350.1
350.15
364.05
364.1
364.15
378.05
378.1
378.15
392.05
392.1
392.15
406.05
406.1
406.15
Time (ns)
Time (ns)

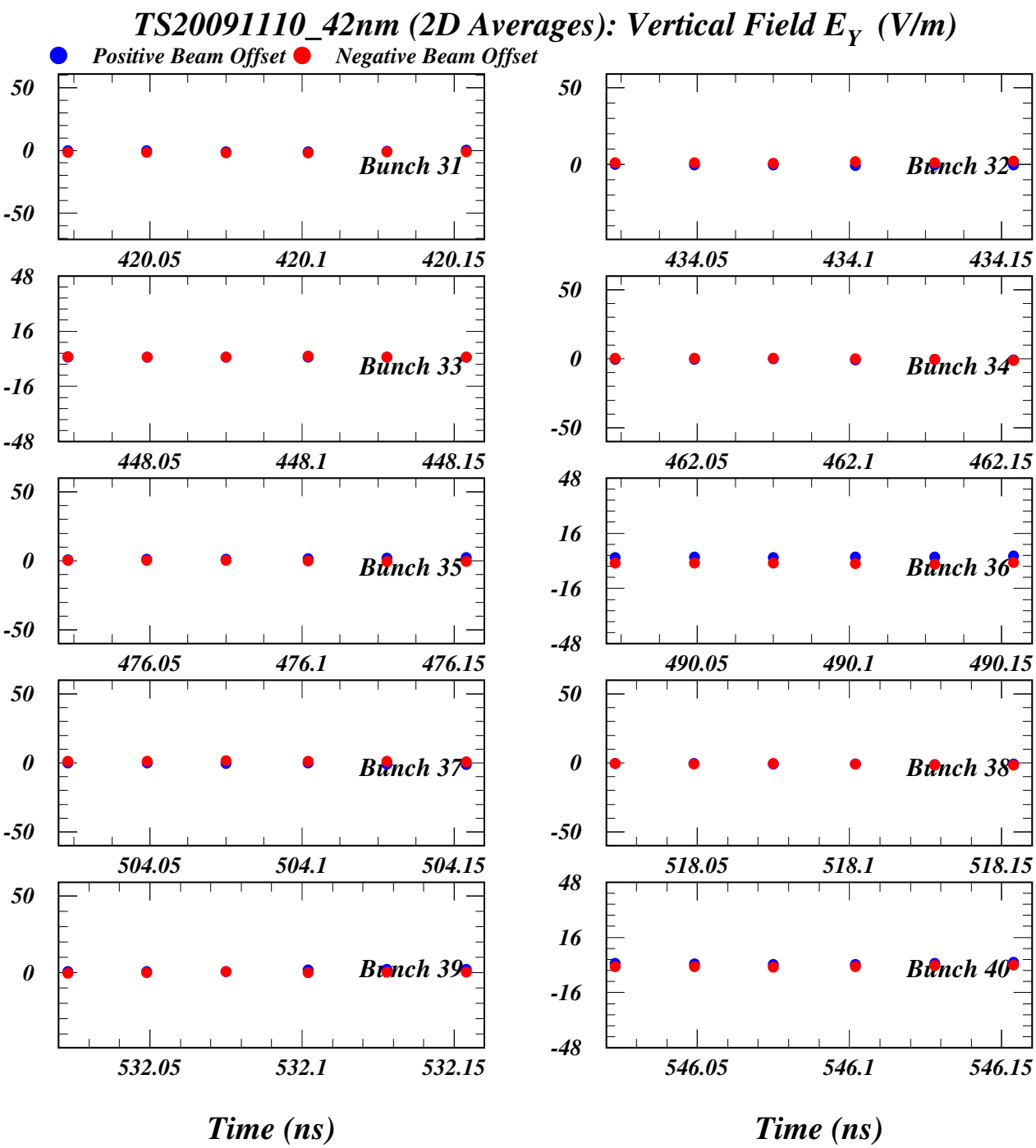

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
100
0
420.05
420.1
420.15
434.05
434.1
434.15
448.05
448.1
448.15
462.05
462.1
462.15
476.05
476.1
476.15
490.05
490.1
490.15
504.05
504.1
504.15
518.05
518.1
518.15
532.05
532.1
532.15
546.05
546.1
546.15
Time (ns)
Time (ns)

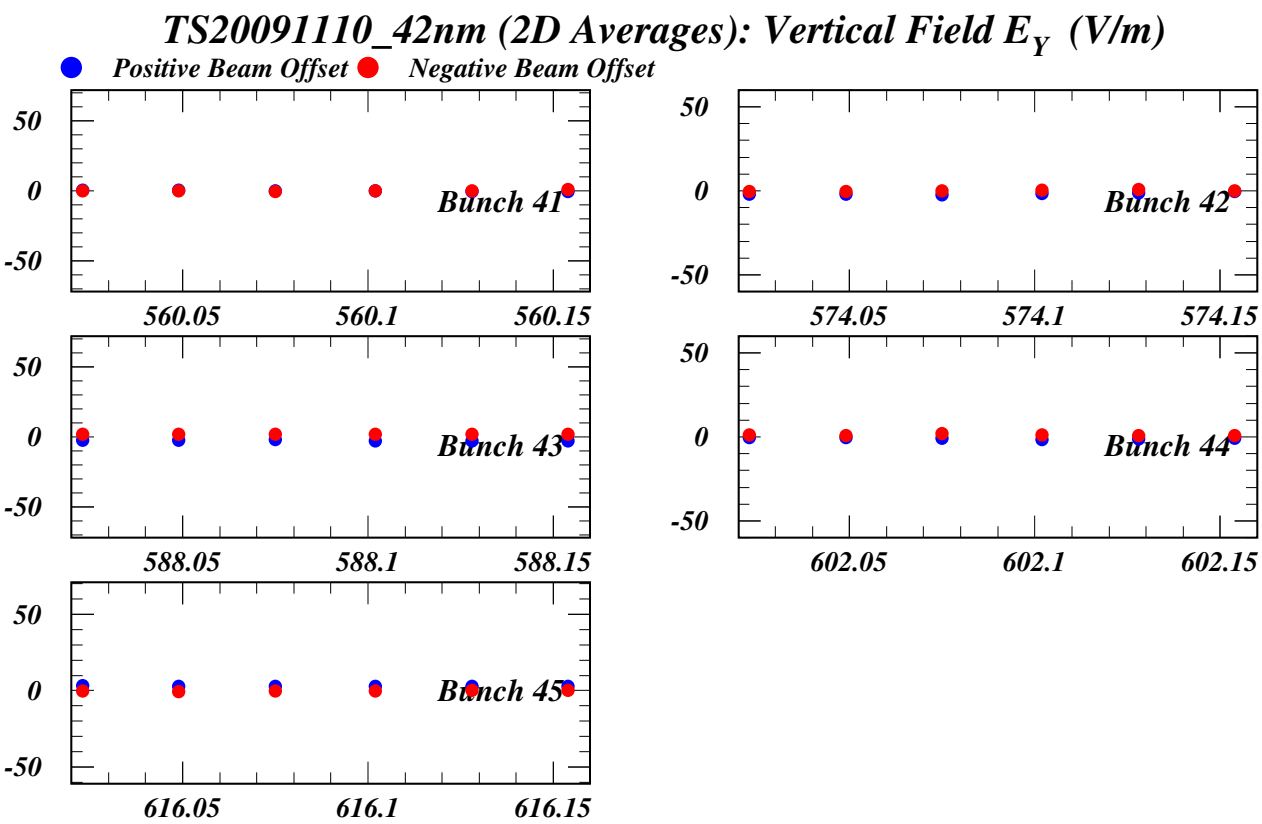

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 41
Bunch 42
Bunch 43
Bunch 44
Bunch 45
100
0
560.05
560.1
560.15
574.05
574.1
574.15
588.05
588.1
588.15
602.05
602.1
602.15
616.05
616.1
616.15

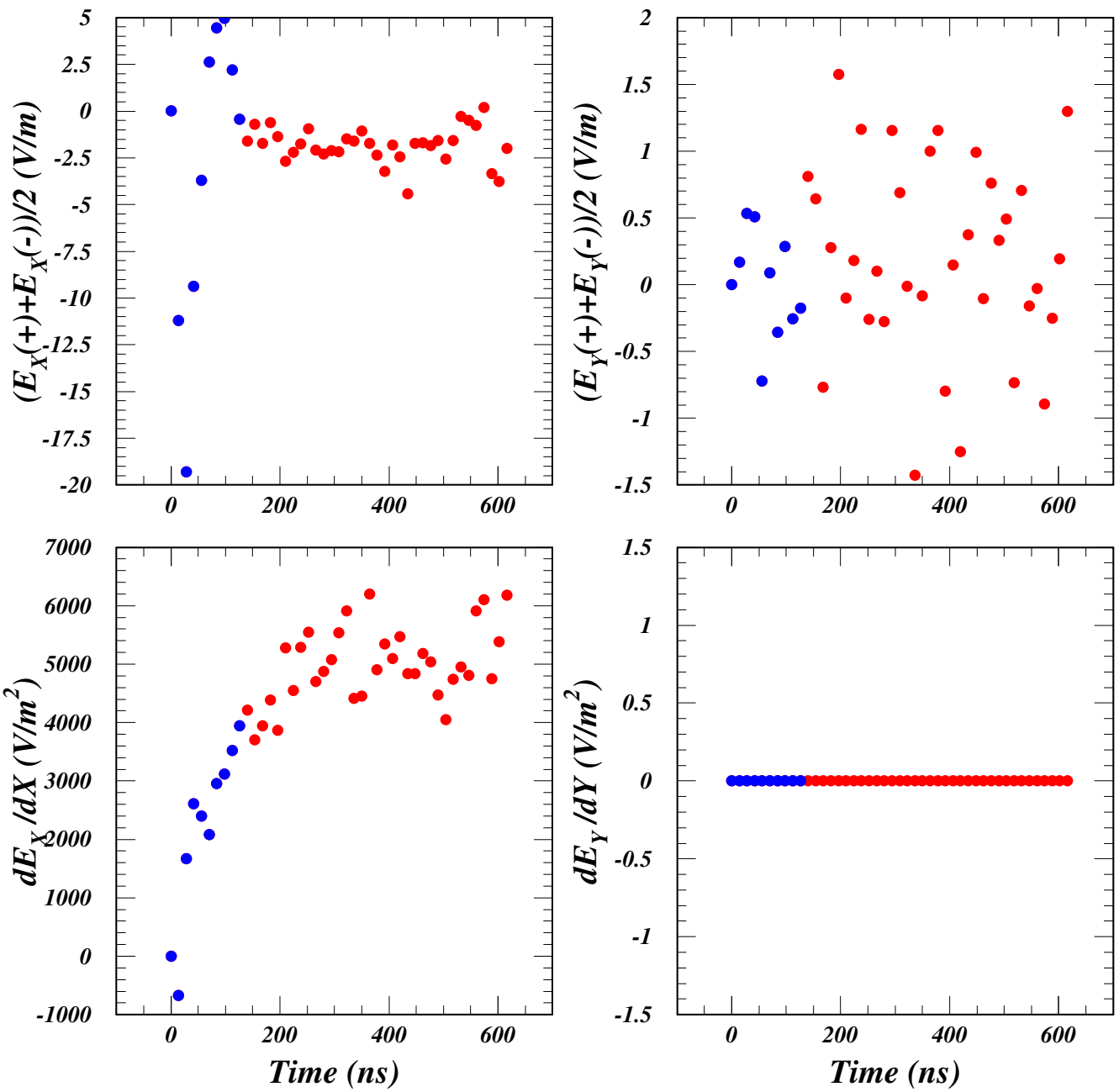

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
Time (ns)
Time (ns)

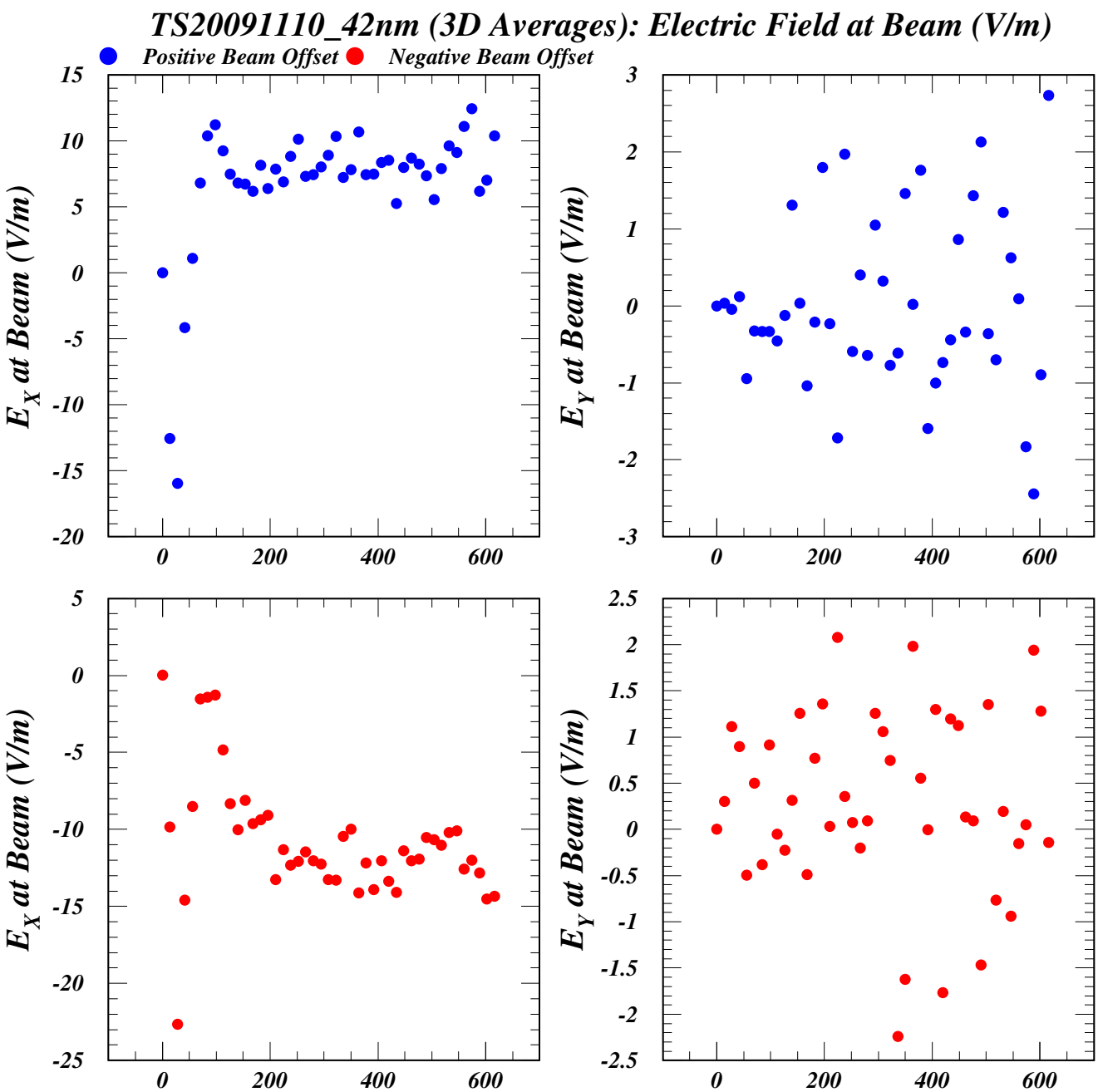

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
Time (ns)
Time (ns)

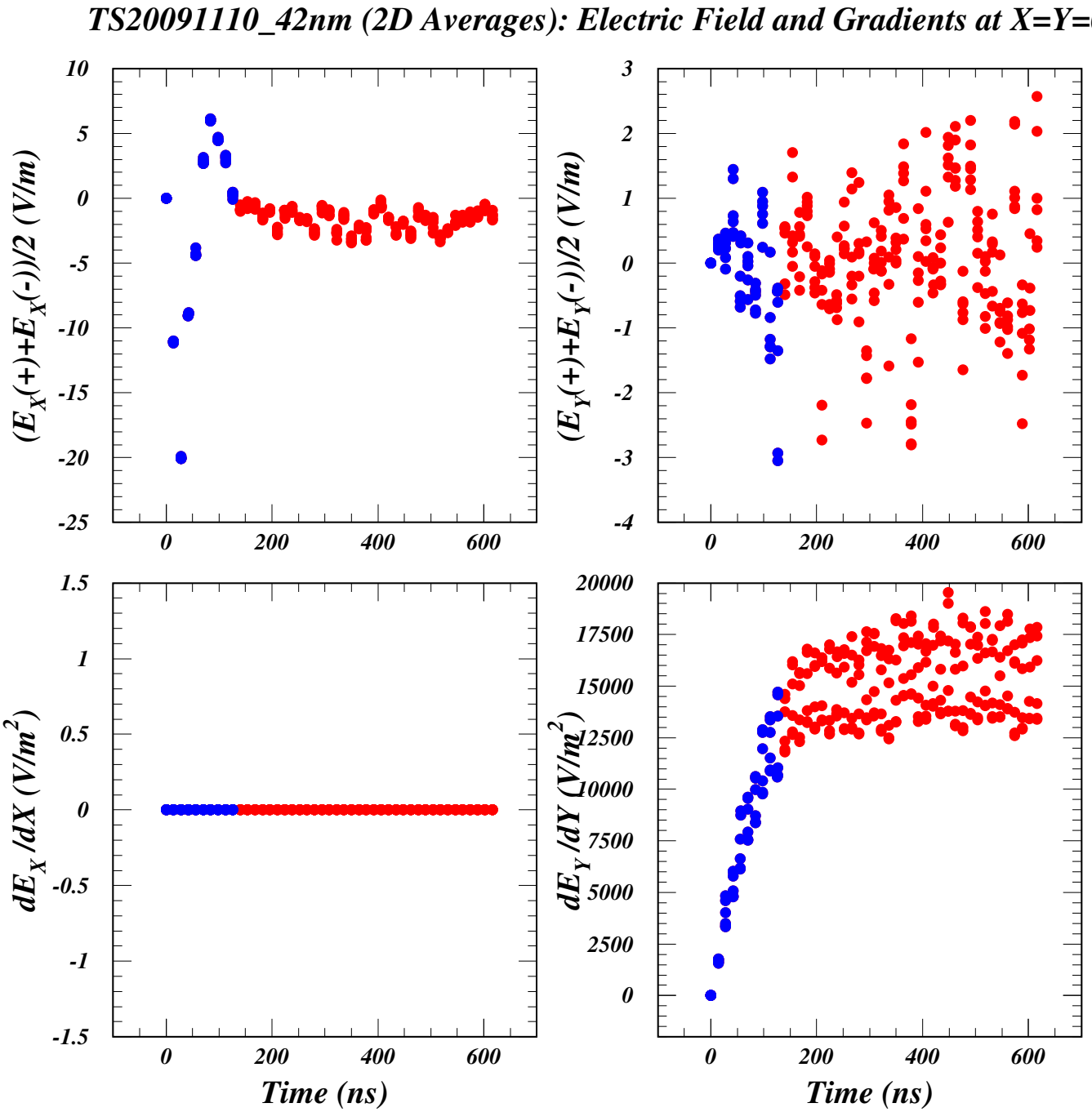

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
Time (ns)
Time (ns)

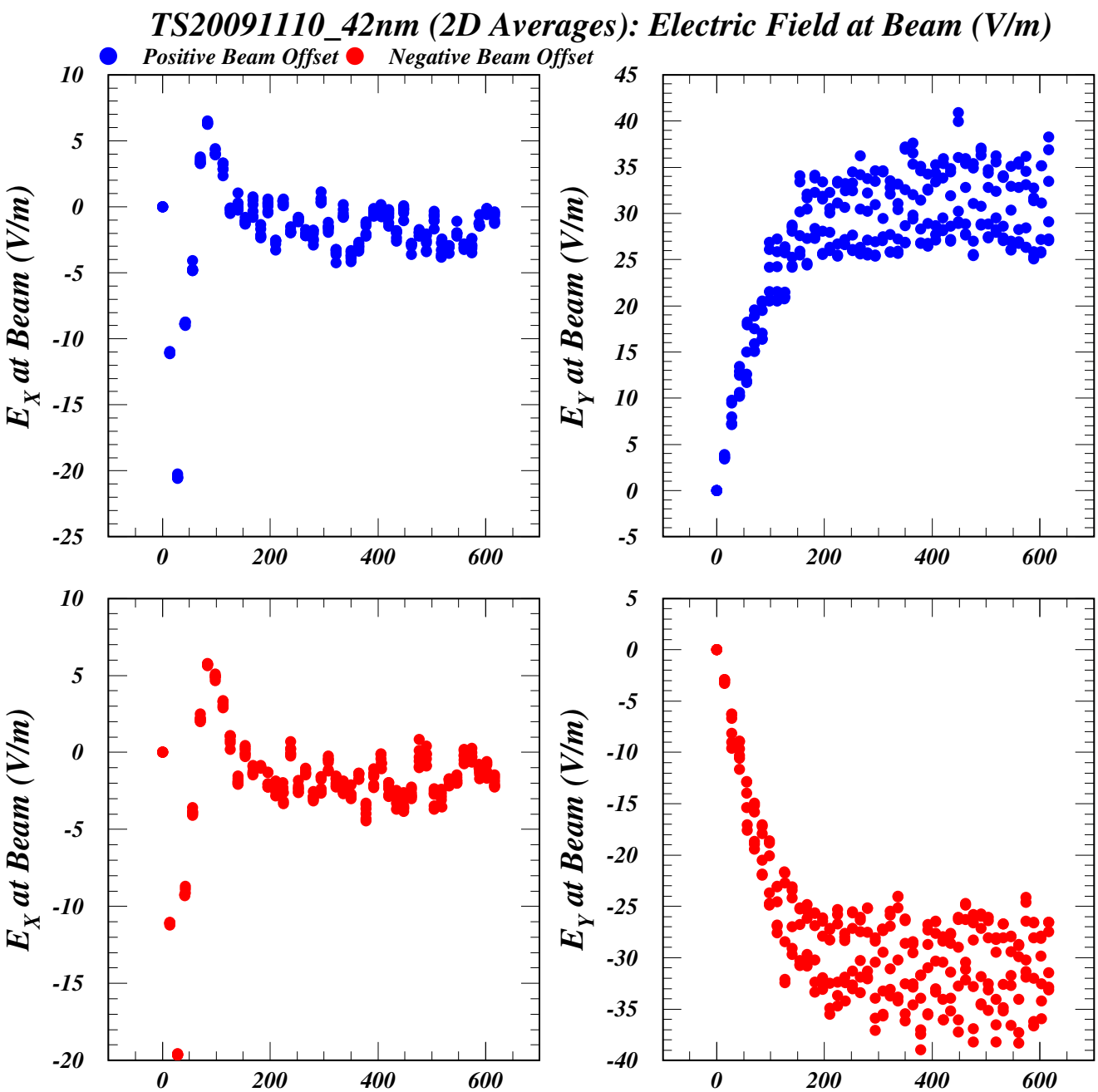

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 41
Bunch 42
Bunch 43
Bunch 44
Bunch 45
50
0
-50
560.05
560.1
560.15
574.05
574.1
574.15
588.05
588.1
588.15
602.05
602.1
602.15
616.05
616.1
616.15

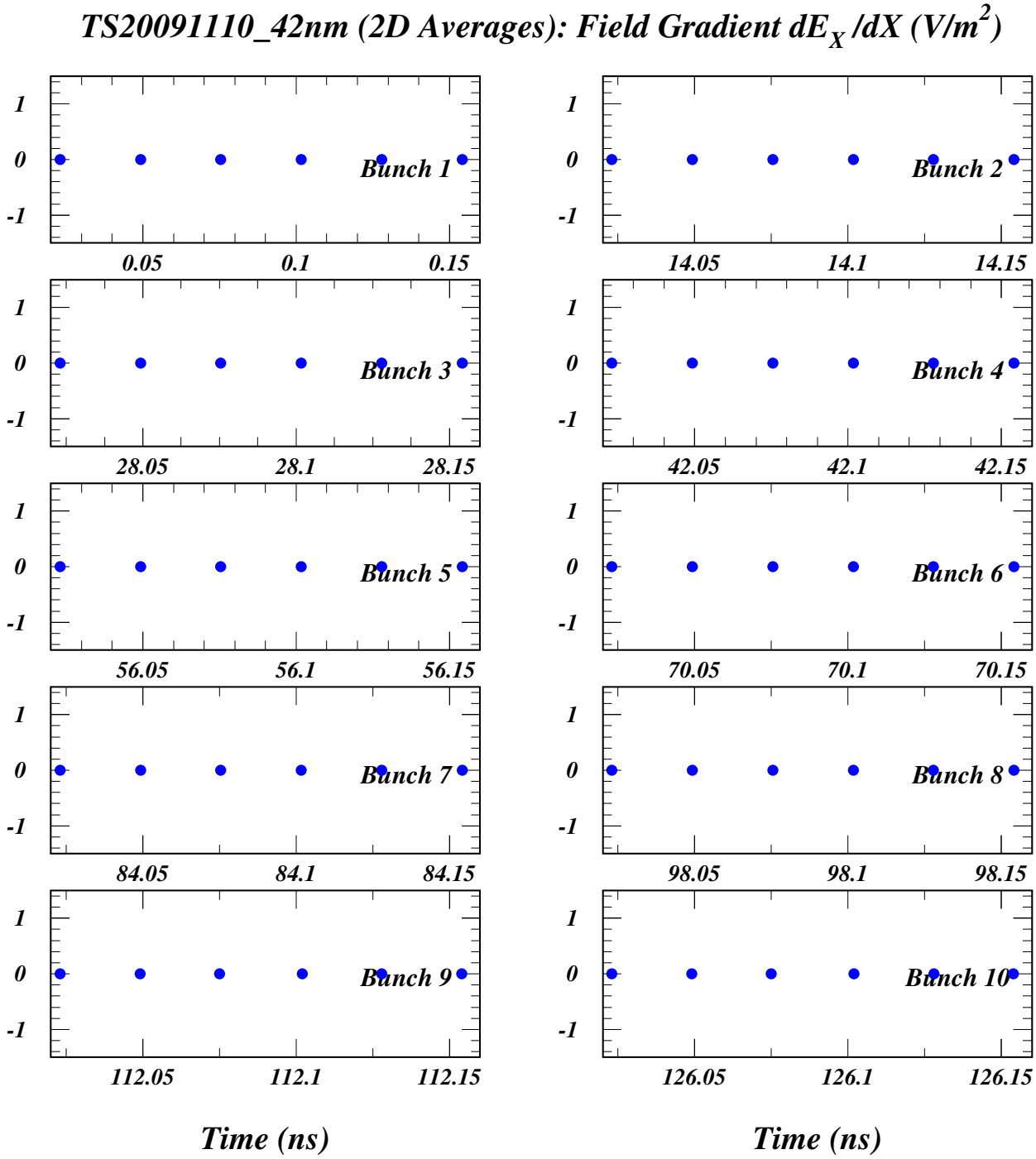


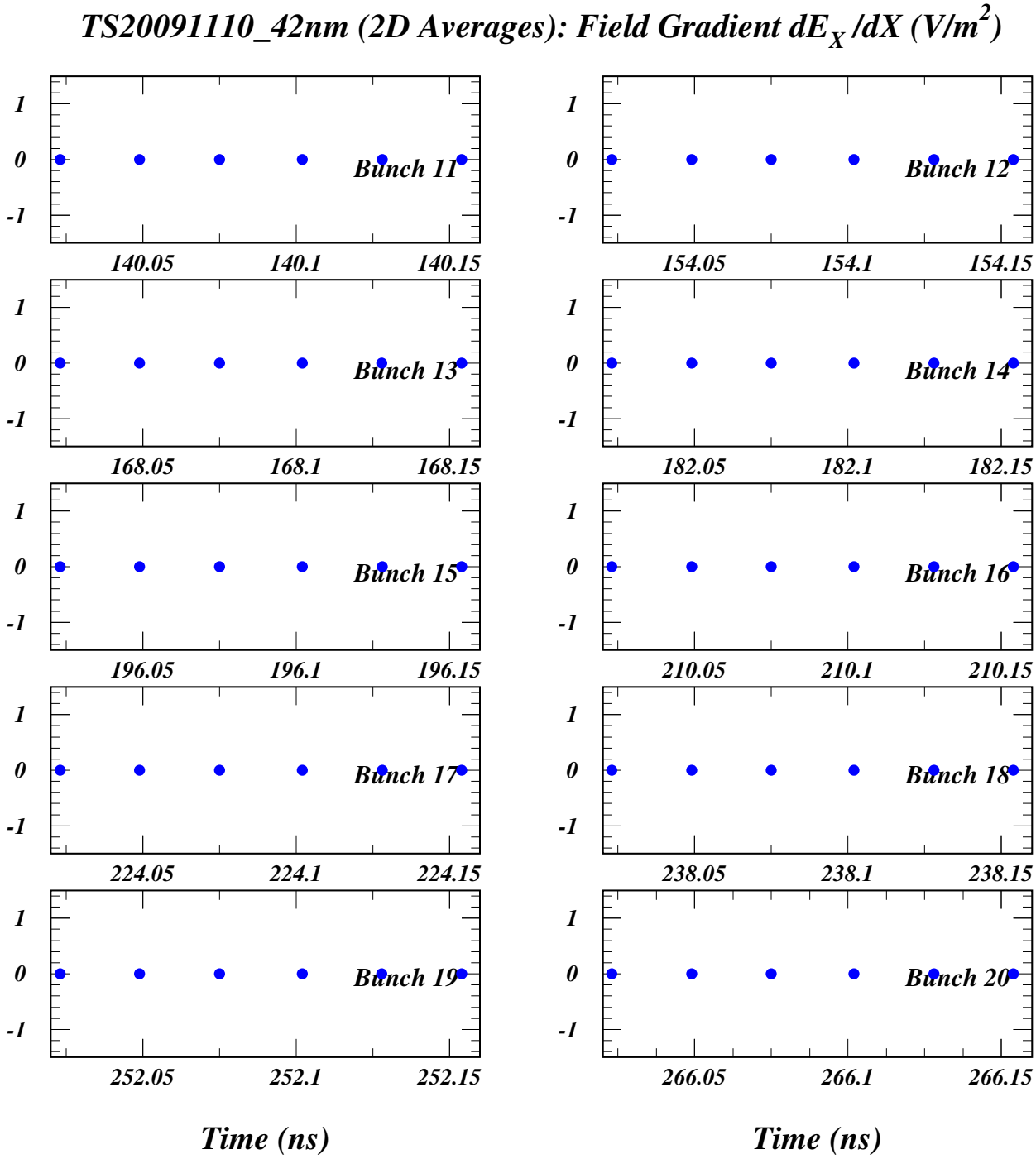
TS20091110_42nm (3D Averages): Electric Field and Gradients at X=Y=0
(E_X(+)+E_X(-))/2 (V/m)
(E_Y(+)+E_Y(-))/2 (V/m)
dE_X/dX (V/m^2)
dE_Y/dY (V/m^2)
Time (ns)
Time (ns)

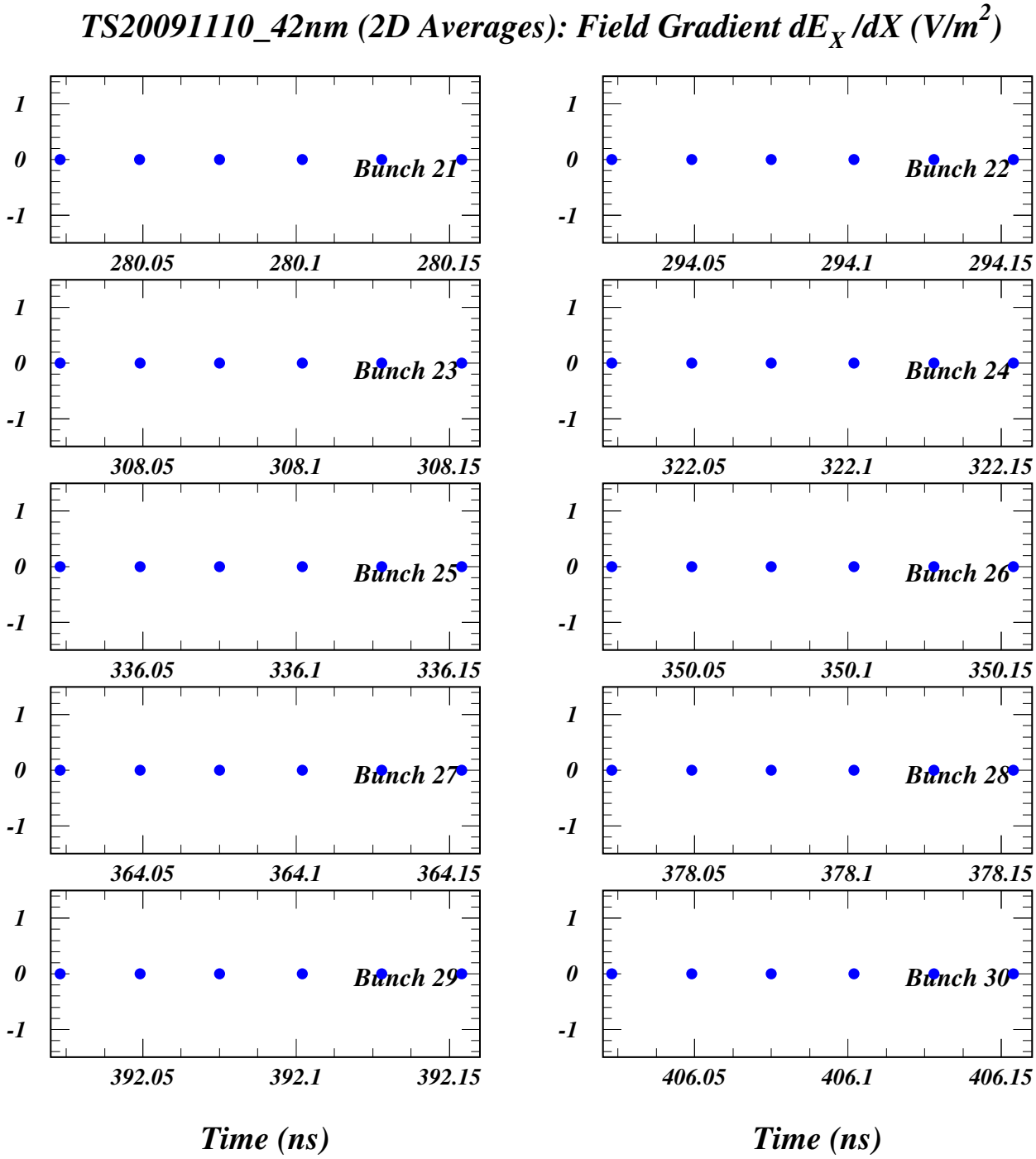

TS20091110_42nm (3D Averages): Electric Field at Beam (V/m)
Positive Beam Offset
Negative Beam Offset
E_X at Beam (V/m)
E_Y at Beam (V/m)
E_X at Beam (V/m)
E_Y at Beam (V/m)

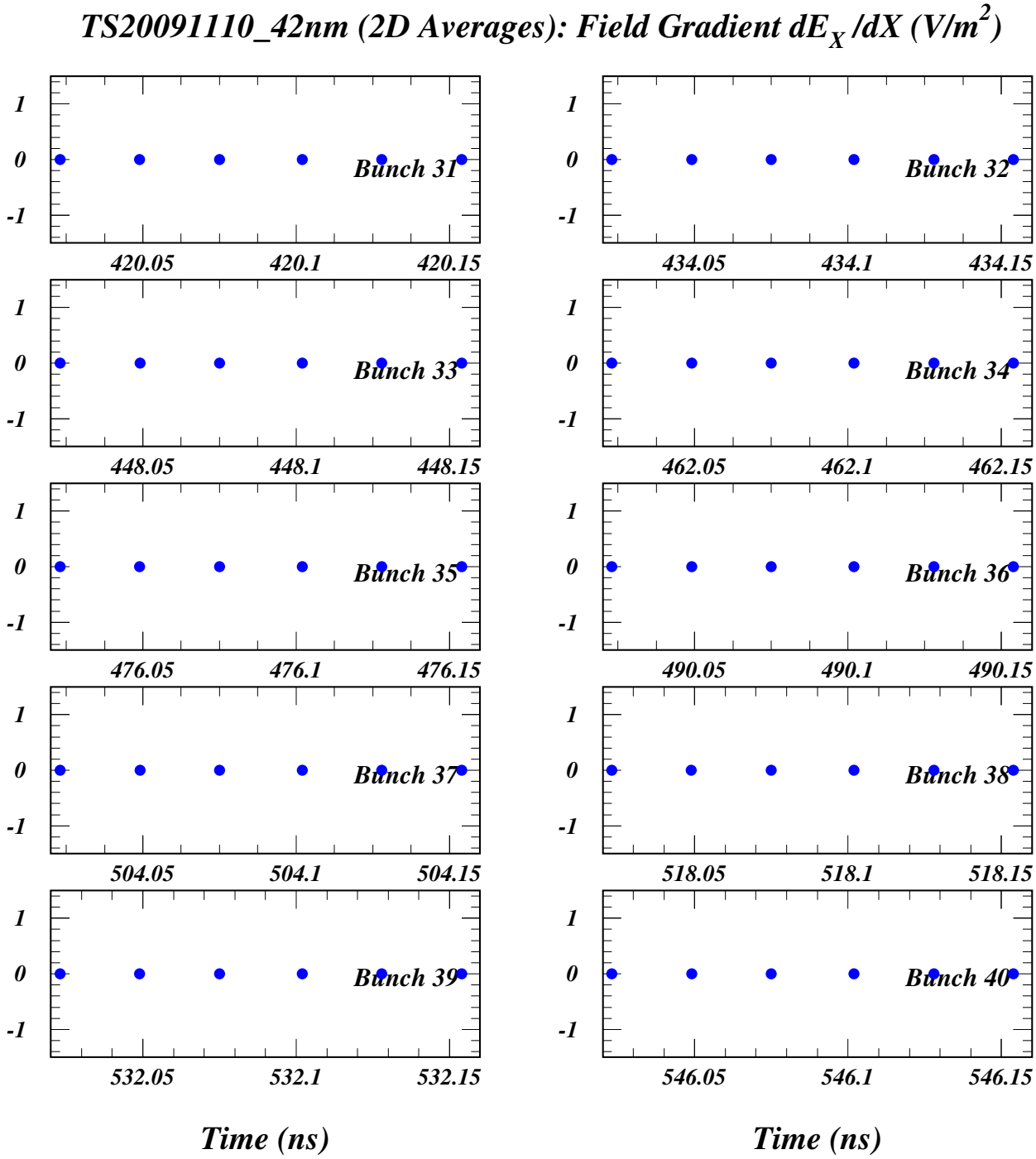

TS20091110_42nm (2D Averages): Electric Field and Gradients at X=Y=0
(E_X(+)+E_X(-))/2 (V/m)
(E_Y(+)+E_Y(-))/2 (V/m)
dE_X/dX (V/m^2)
dE_Y/dY (V/m^2)
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Electric Field at Beam (V/m)
Positive Beam Offset
Negative Beam Offset
E_X at Beam (V/m)
E_Y at Beam (V/m)
E_X at Beam (V/m)
E_Y at Beam (V/m)

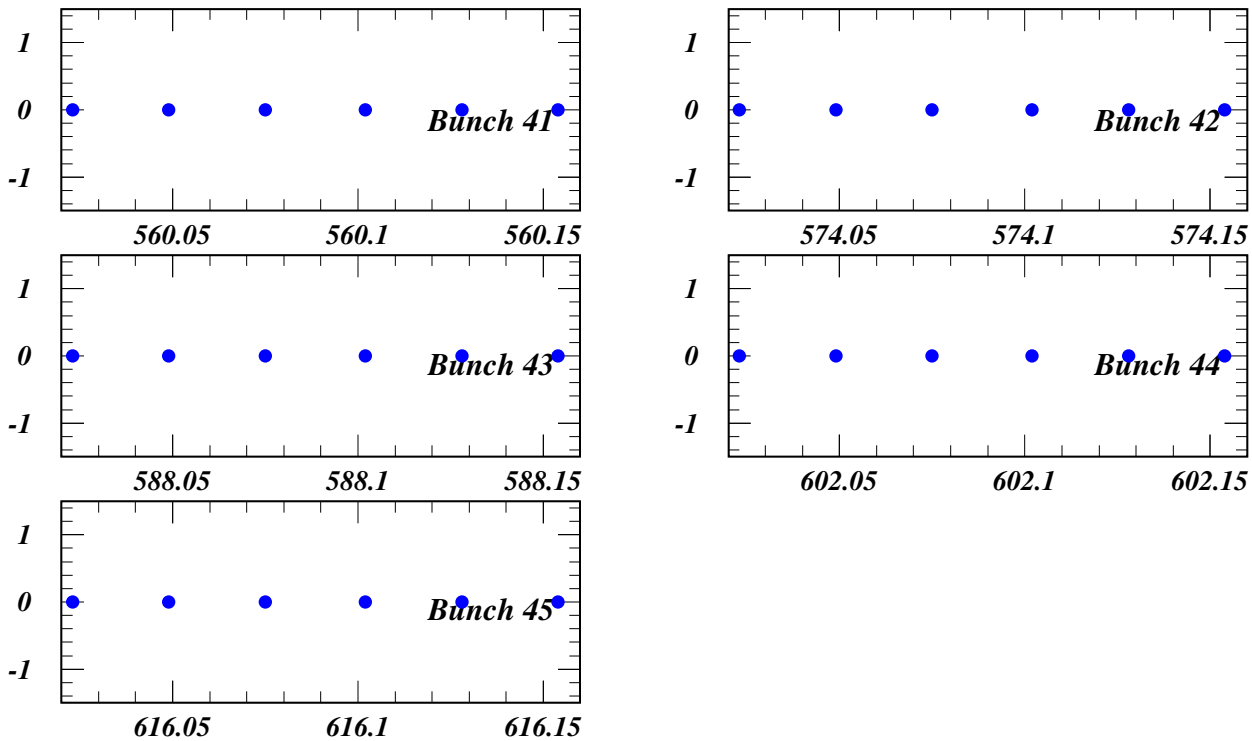

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
1
0
-1
0.05
0.1
0.15
14.05
14.1
14.15
28.05
28.1
28.15
42.05
42.1
42.15
56.05
56.1
56.15
70.05
70.1
70.15
84.05
84.1
84.15
98.05
98.1
98.15
112.05
112.1
112.15
126.05
126.1
126.15
Time (ns)
Time (ns)

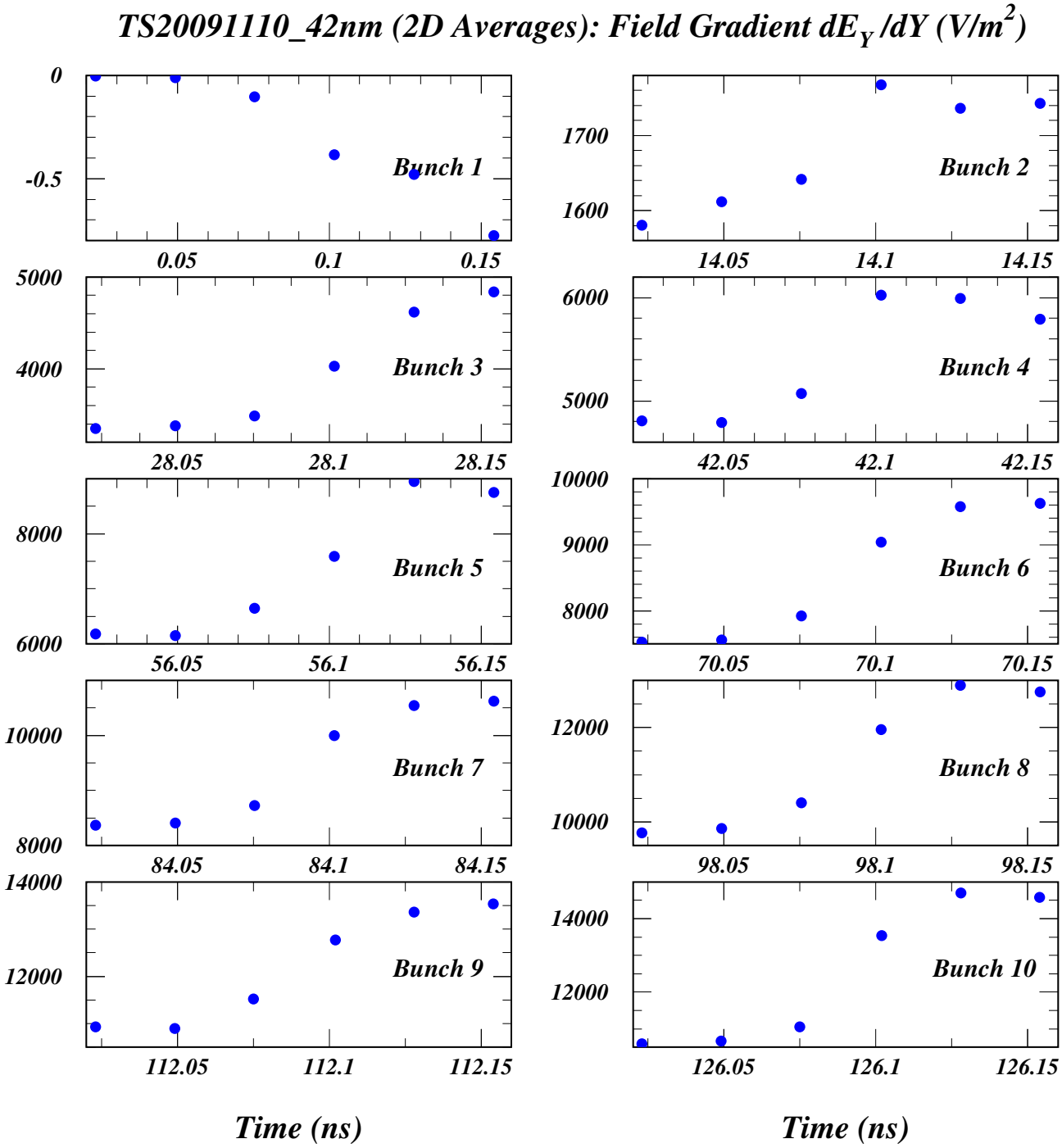

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
1
0
-1
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)

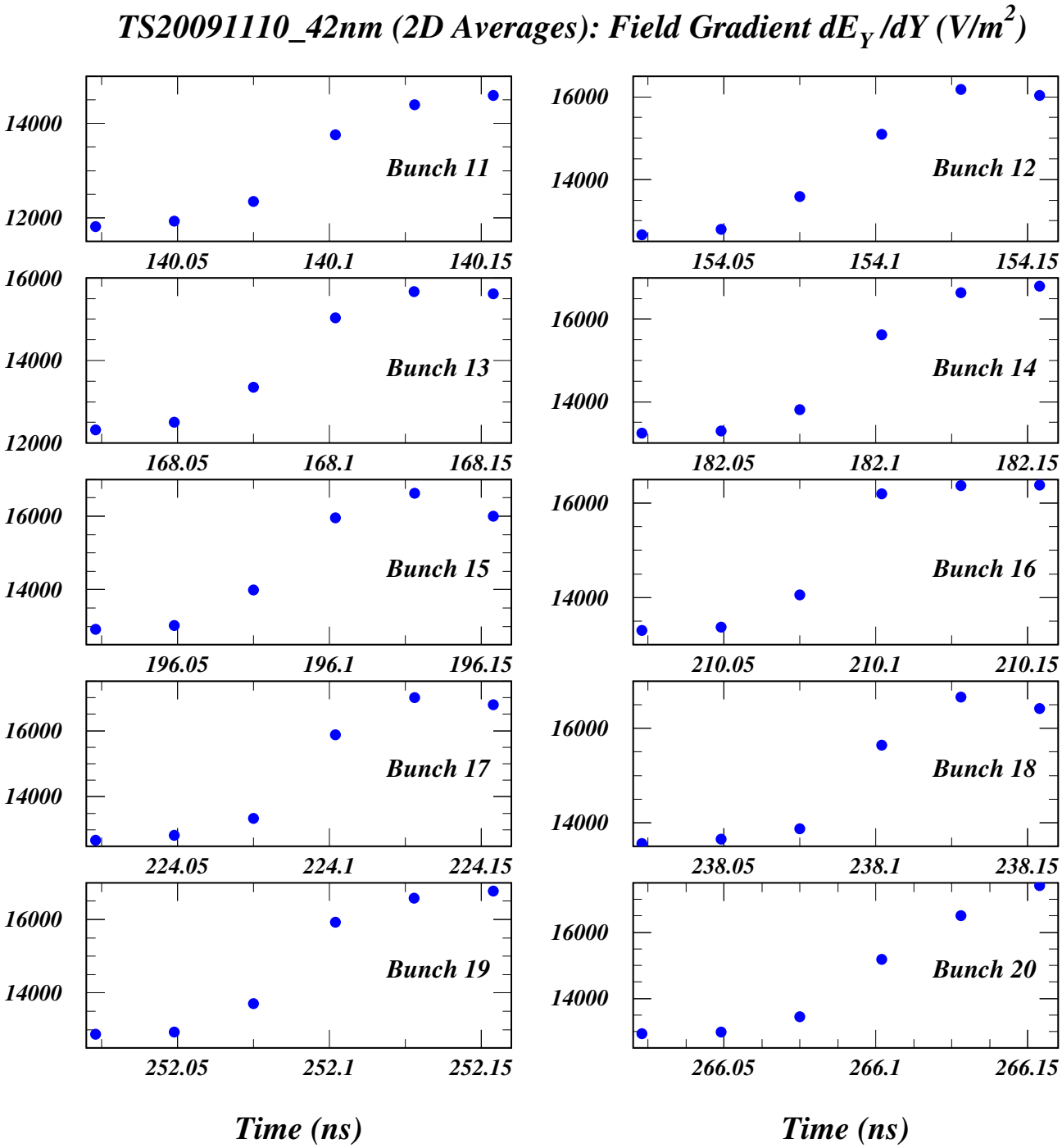

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
1
0
-1
280.05
280.1
280.15
294.05
294.1
294.15
308.05
308.1
308.15
322.05
322.1
322.15
336.05
336.1
336.15
350.05
350.1
350.15
364.05
364.1
364.15
378.05
378.1
378.15
392.05
392.1
392.15
406.05
406.1
406.15
Time (ns)
Time (ns)

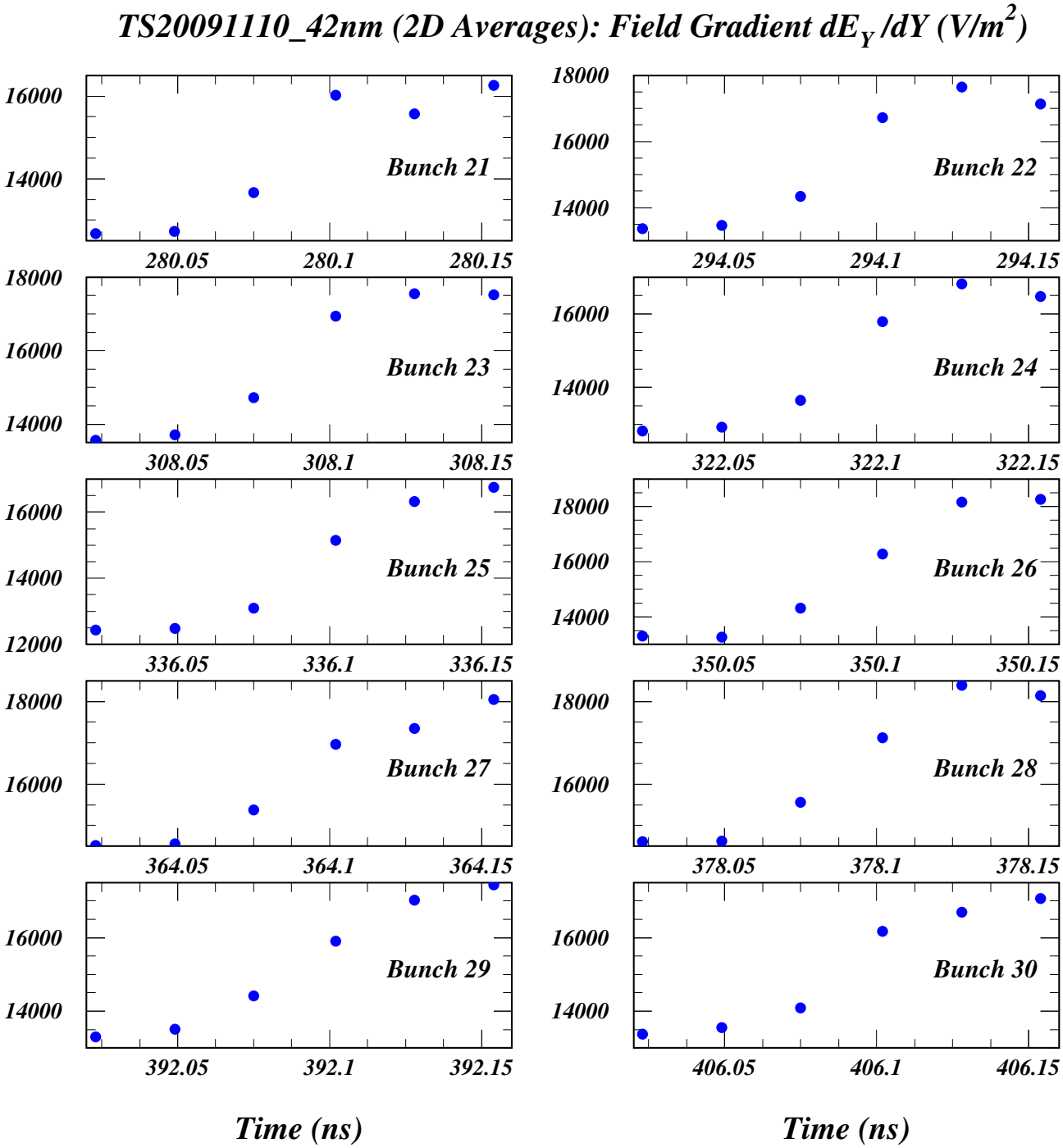

TS20091110_42nm (2D Averages): Field Gradient dE_X /dX (V/m^2)
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
1
0
-1
420.05
420.1
420.15
434.05
434.1
434.15
448.05
448.1
448.15
462.05
462.1
462.15
476.05
476.1
476.15
490.05
490.1
490.15
504.05
504.1
504.15
518.05
518.1
518.15
532.05
532.1
532.15
546.05
546.1
546.15
Time (ns)
Time (ns)

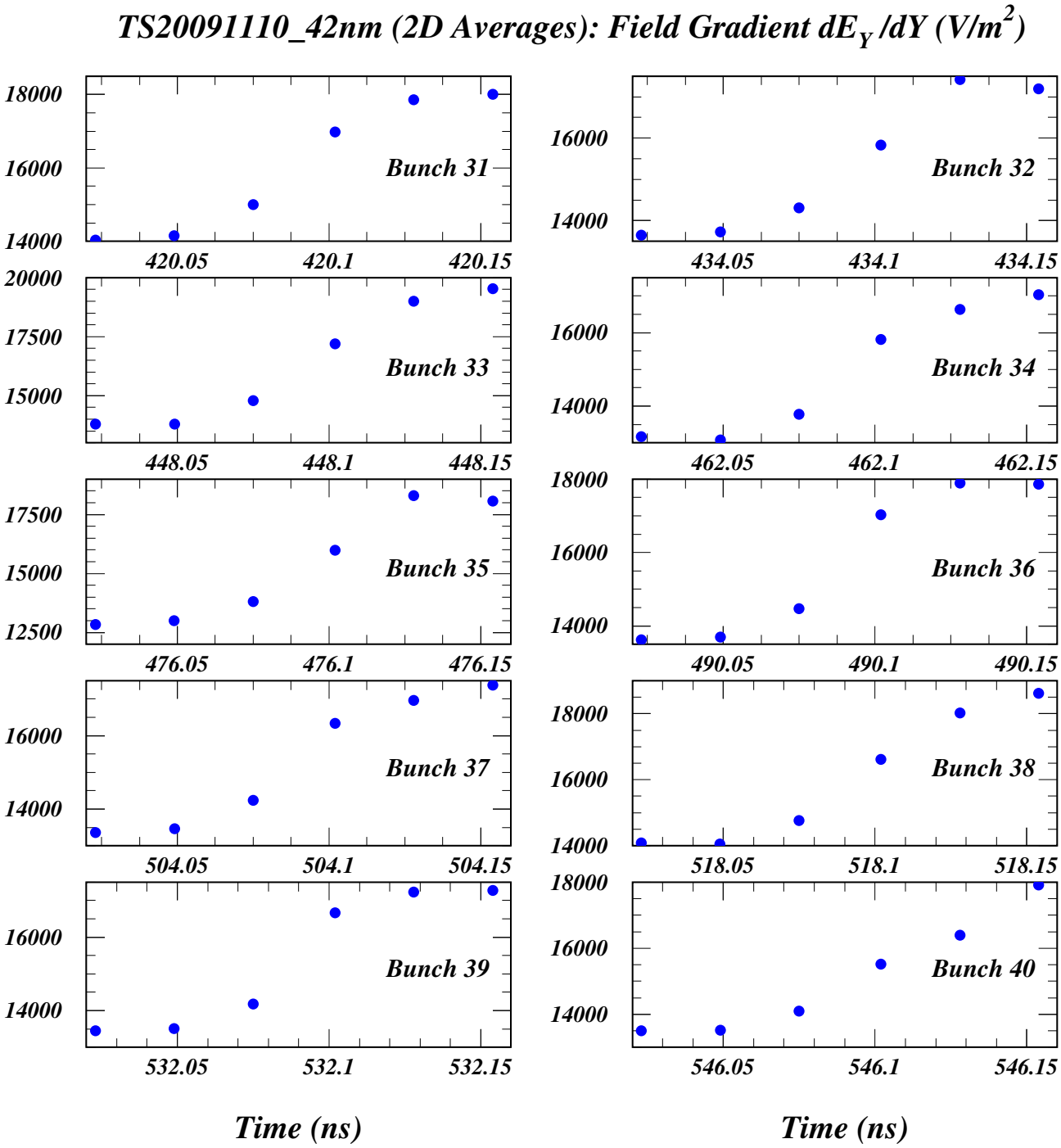
TS20091110_42nm (2D Averages): Field Gradient dE_X/dX (V/m^2)



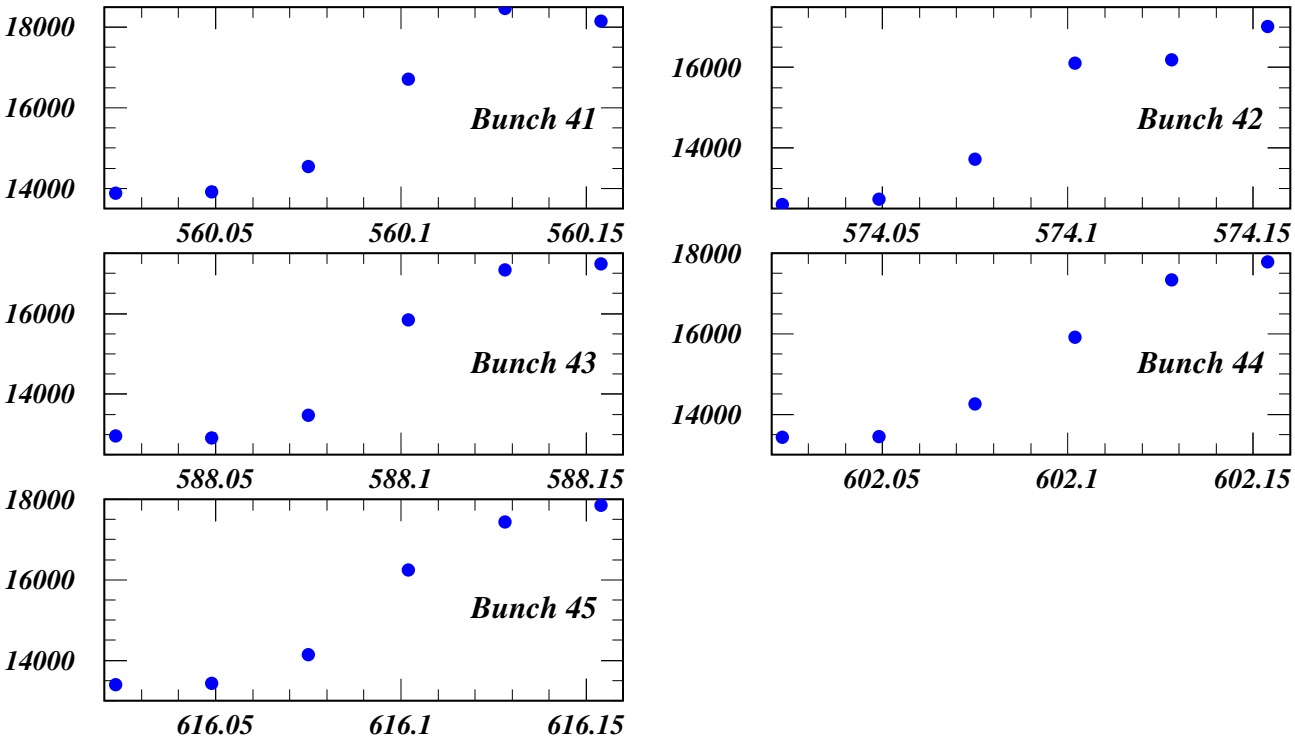

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
0
-0.5
0.05
0.1
0.15
1700
1600
14.05
14.1
14.15
5000
4000
28.05
28.1
28.15
6000
5000
42.05
42.1
42.15
8000
6000
56.05
56.1
56.15
10000
9000
8000
70.05
70.1
70.15
10000
8000
84.05
84.1
84.15
12000
10000
98.05
98.1
98.15
14000
12000
112.05
112.1
112.15
14000
12000
126.05
126.1
126.15
Time (ns)
Time (ns)

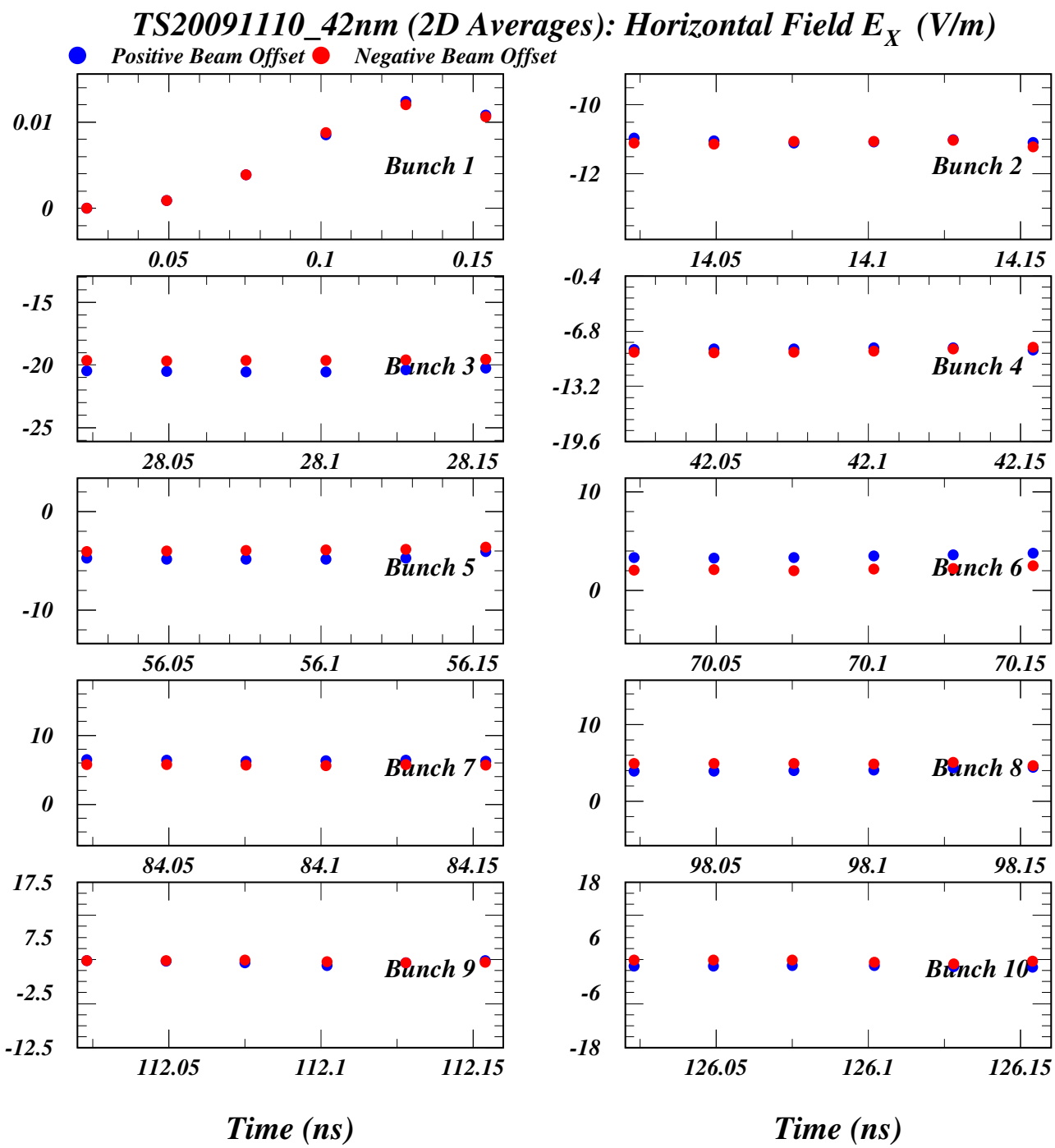

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
14000
16000
12000
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)

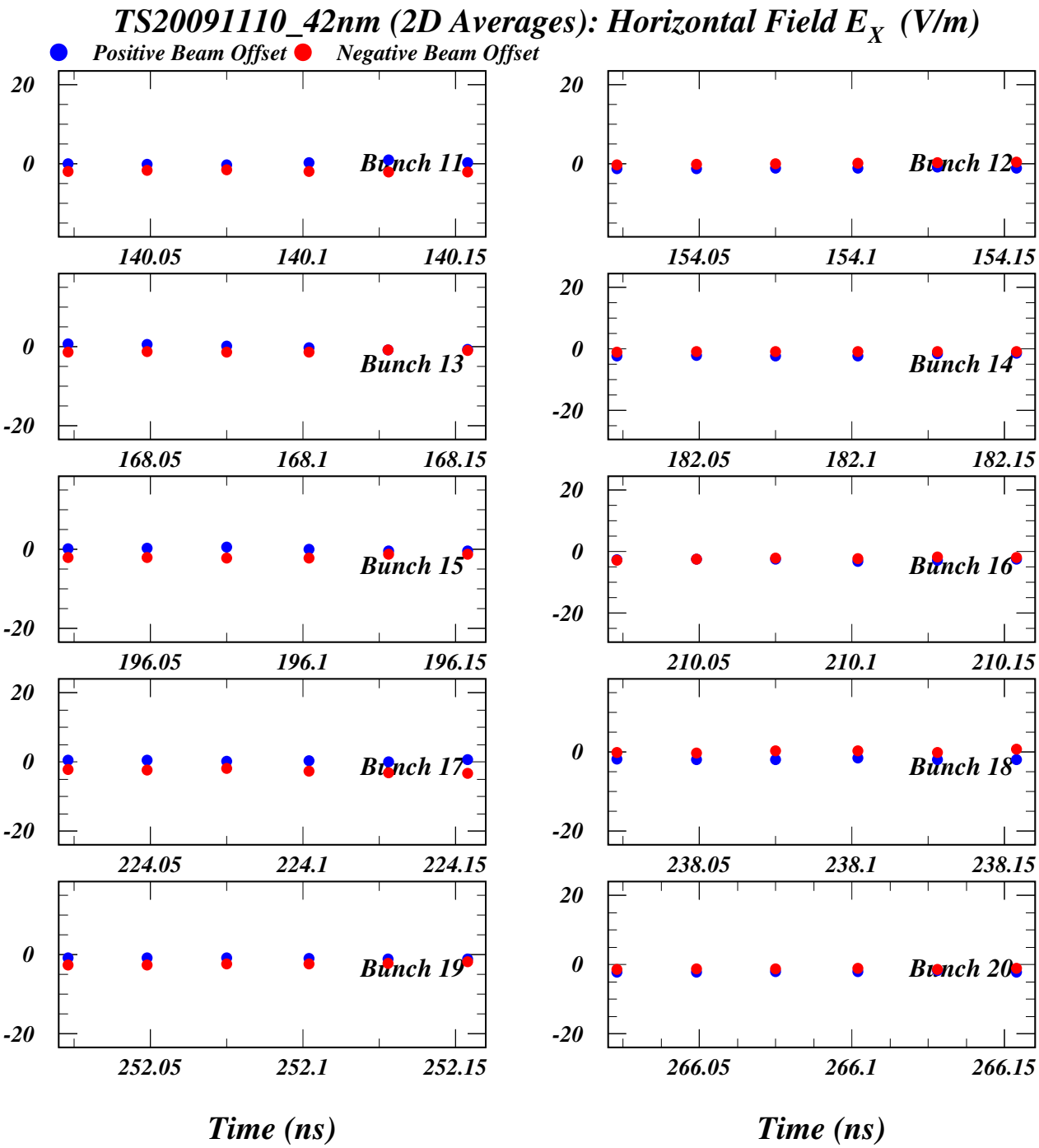

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
Time (ns)
Time (ns)

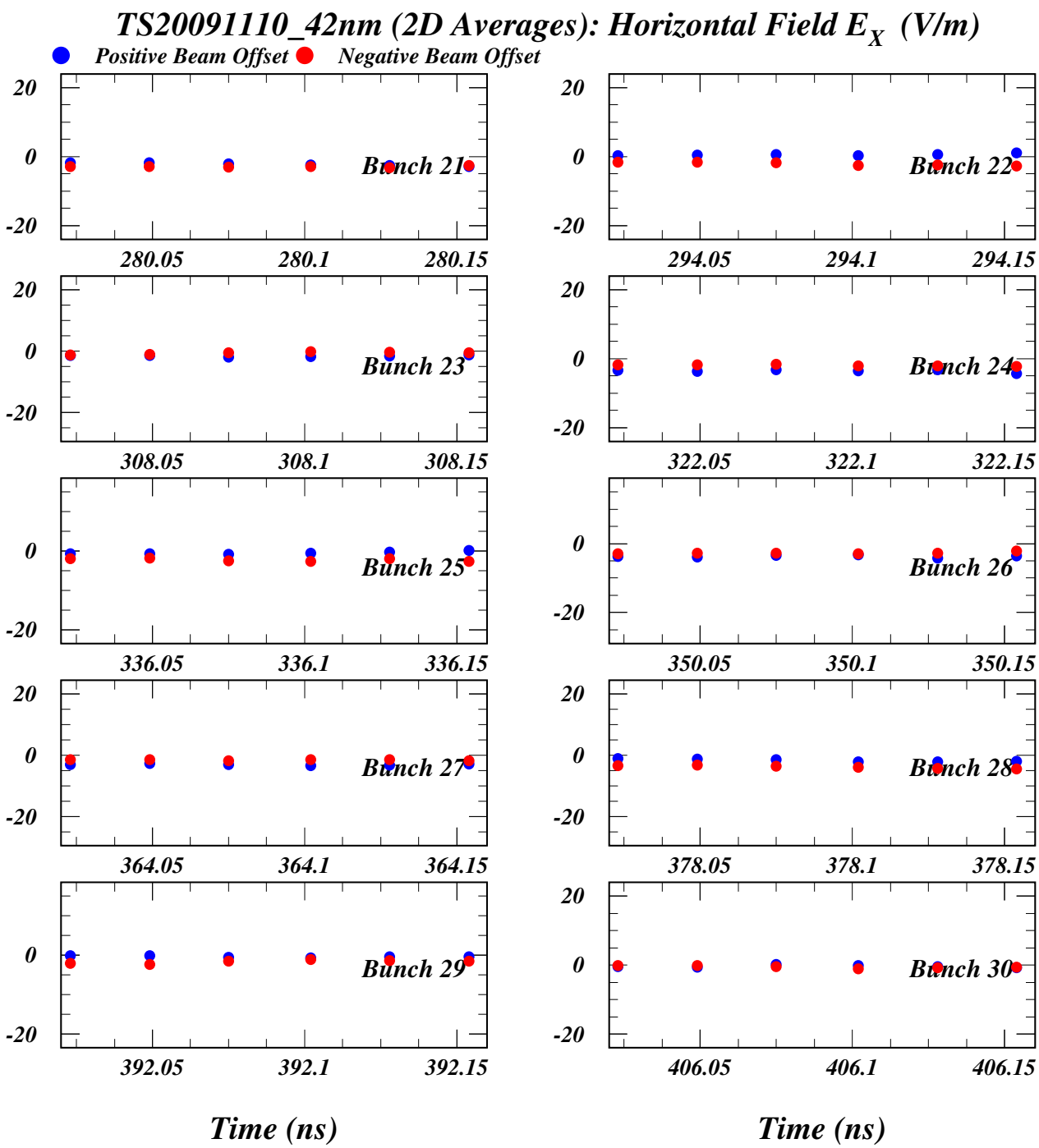

TS20091110_42nm (2D Averages): Field Gradient dE_Y /dY (V/m^2)
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
Time (ns)
Time (ns)

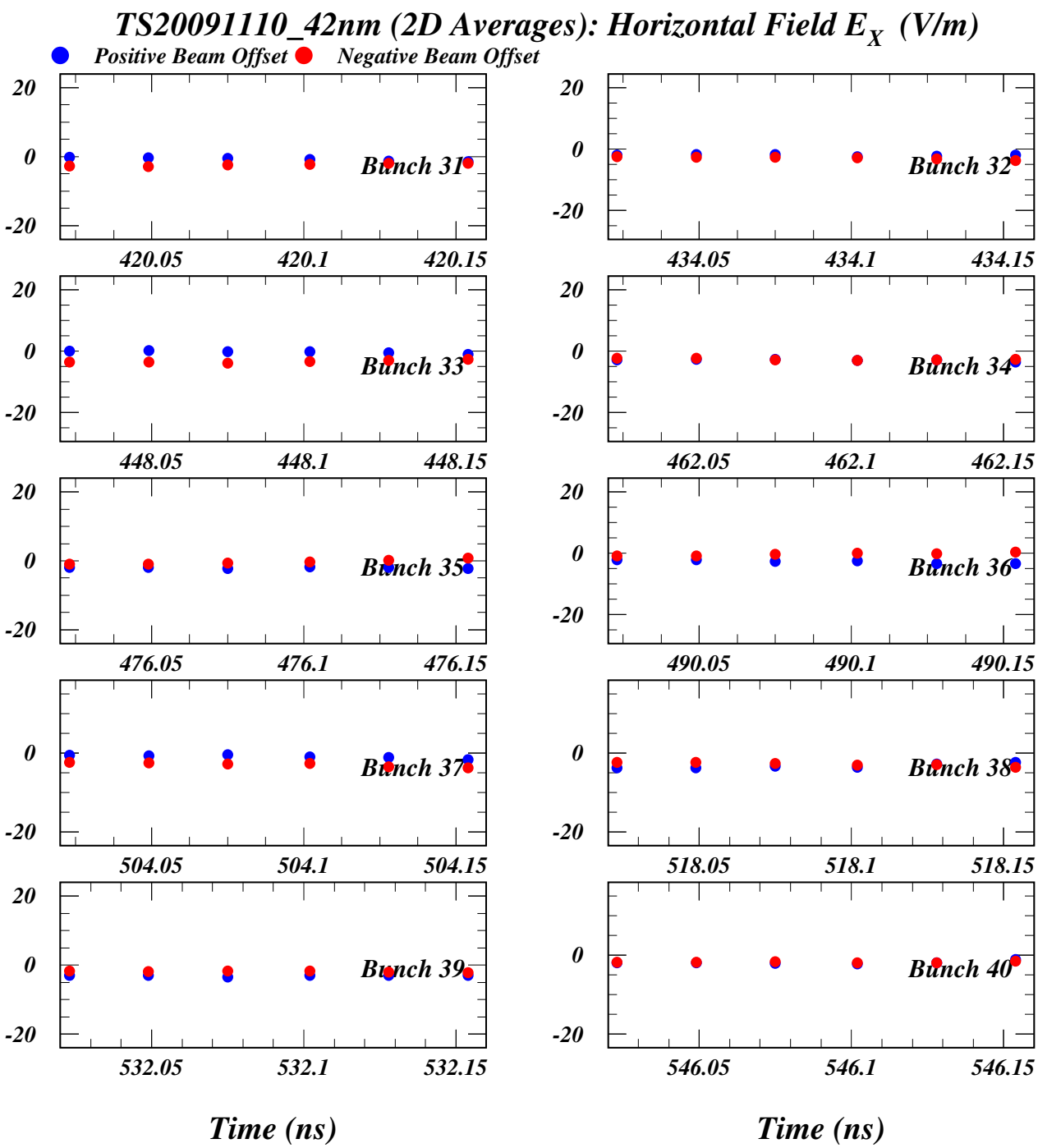
TS20091110_42nm (2D Averages): Field Gradient dE_Y/dY (V/m^2)

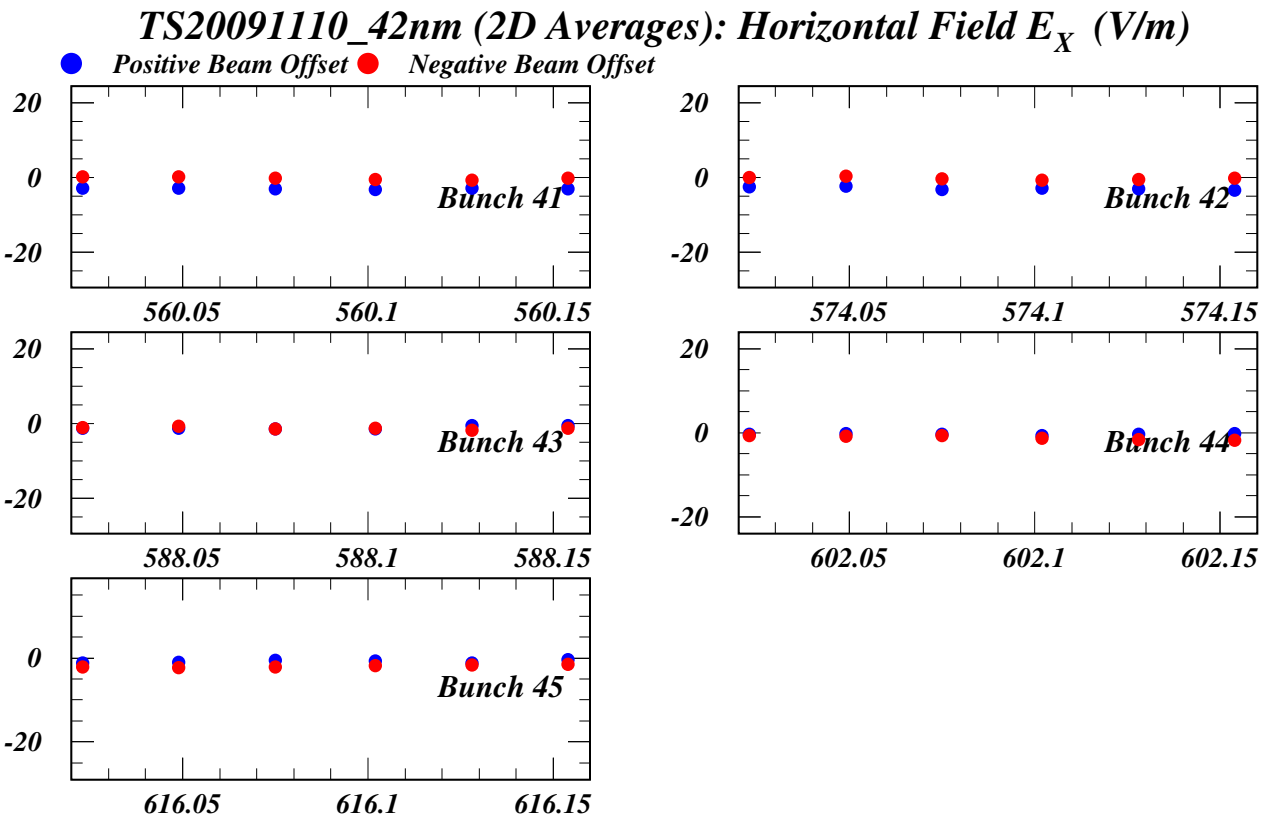


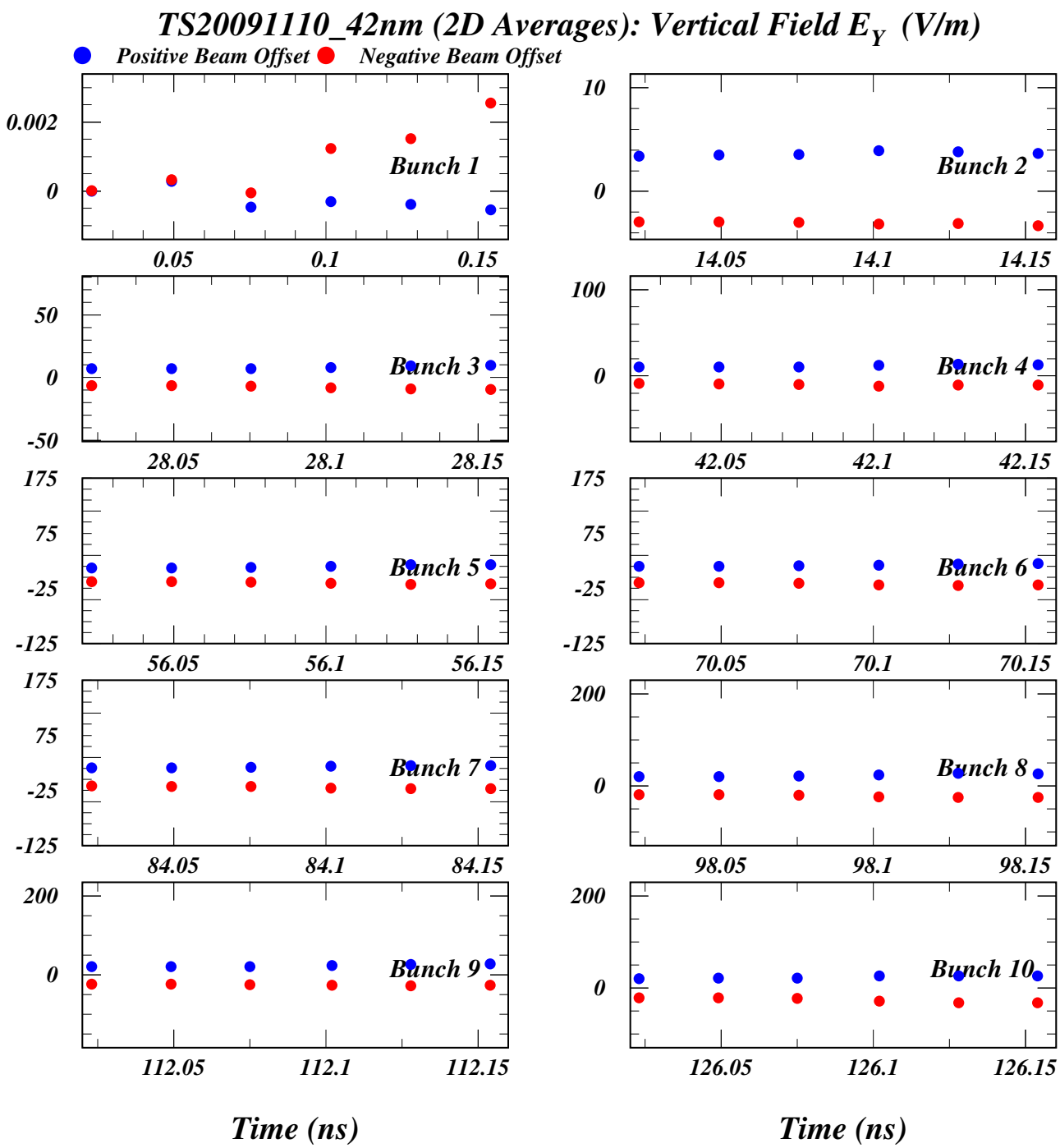

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
0.01
0
0.05
0.1
0.15
-10
-12
14.05
14.1
14.15
-15
-20
-25
28.05
28.1
28.15
-0.4
-6.8
-13.2
-19.6
42.05
42.1
42.15
0
-10
56.05
56.1
56.15
10
0
70.05
70.1
70.15
10
0
84.05
84.1
84.15
98.05
98.1
98.15
17.5
7.5
-2.5
-12.5
112.05
112.1
112.15
18
6
-6
-18
126.05
126.1
126.15
Time (ns)
Time (ns)

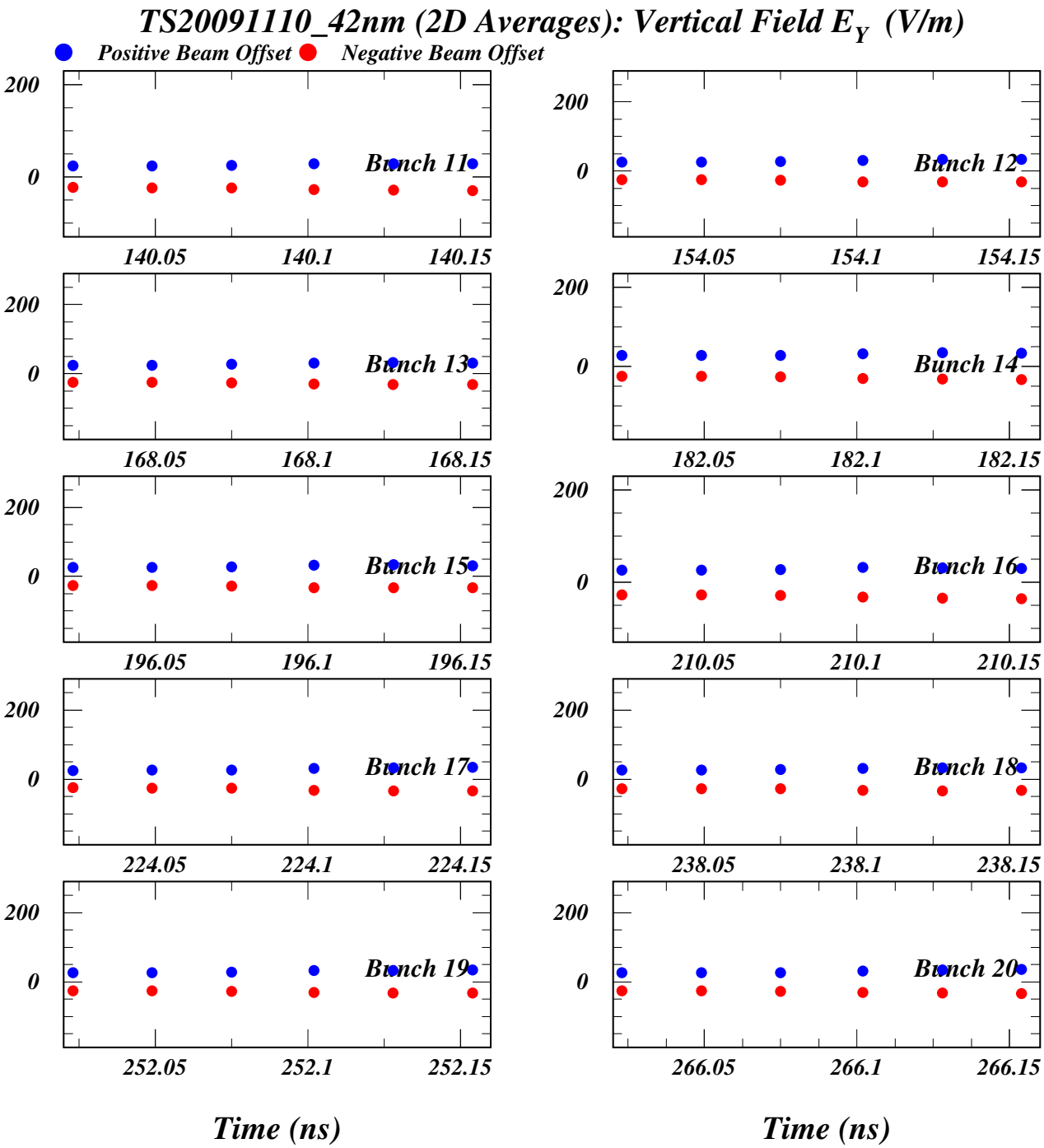

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
20
0
-20
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)

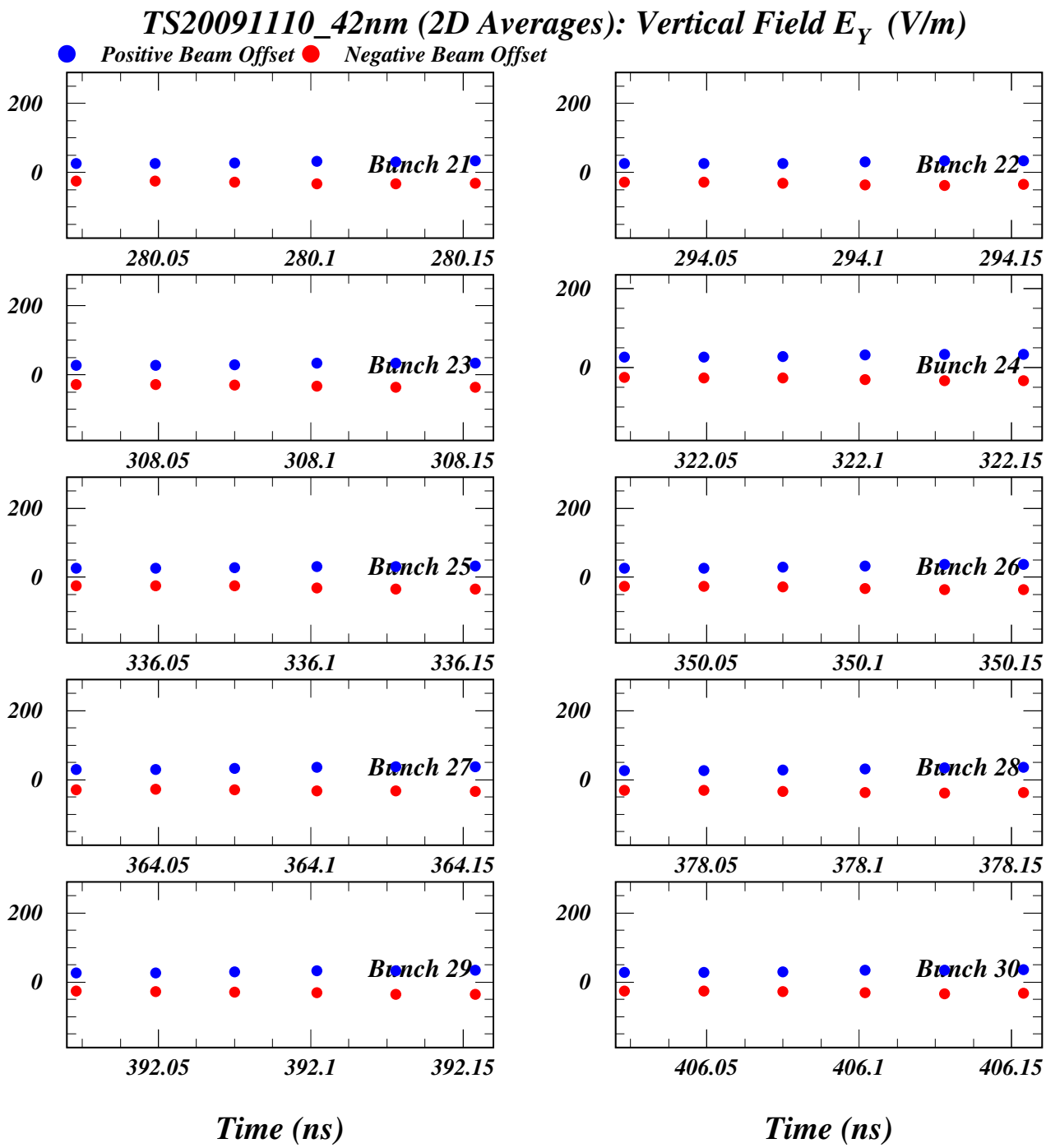

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
20
0
-20
280.05
280.1
280.15
294.05
294.1
294.15
308.05
308.1
308.15
322.05
322.1
322.15
336.05
336.1
336.15
350.05
350.1
350.15
364.05
364.1
364.15
378.05
378.1
378.15
392.05
392.1
392.15
406.05
406.1
406.15
Time (ns)
Time (ns)

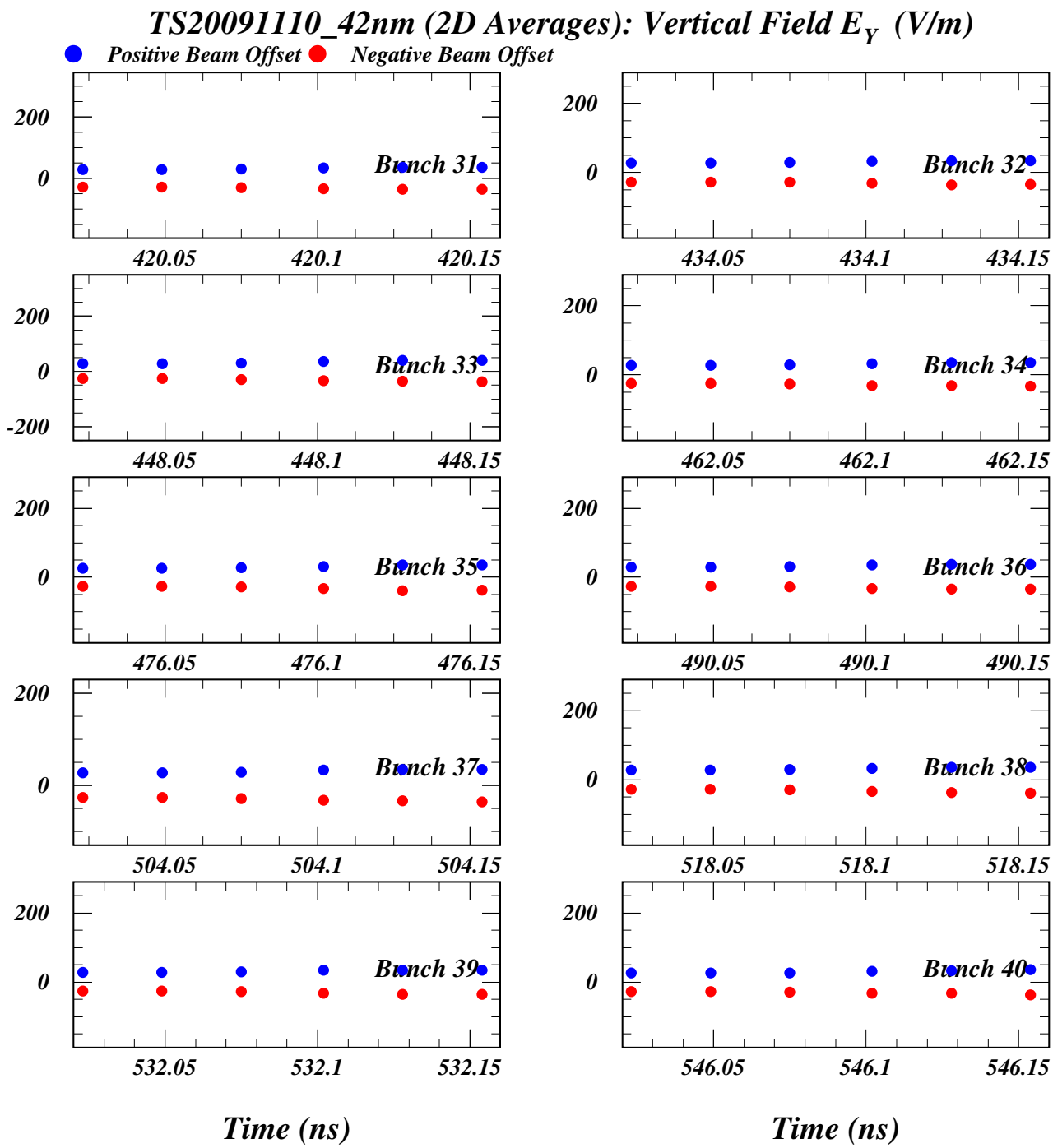

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
20
0
-20
420.05
420.1
420.15
434.05
434.1
434.15
448.05
448.1
448.15
462.05
462.1
462.15
476.05
476.1
476.15
490.05
490.1
490.15
504.05
504.1
504.15
518.05
518.1
518.15
532.05
532.1
532.15
546.05
546.1
546.15
Time (ns)
Time (ns)

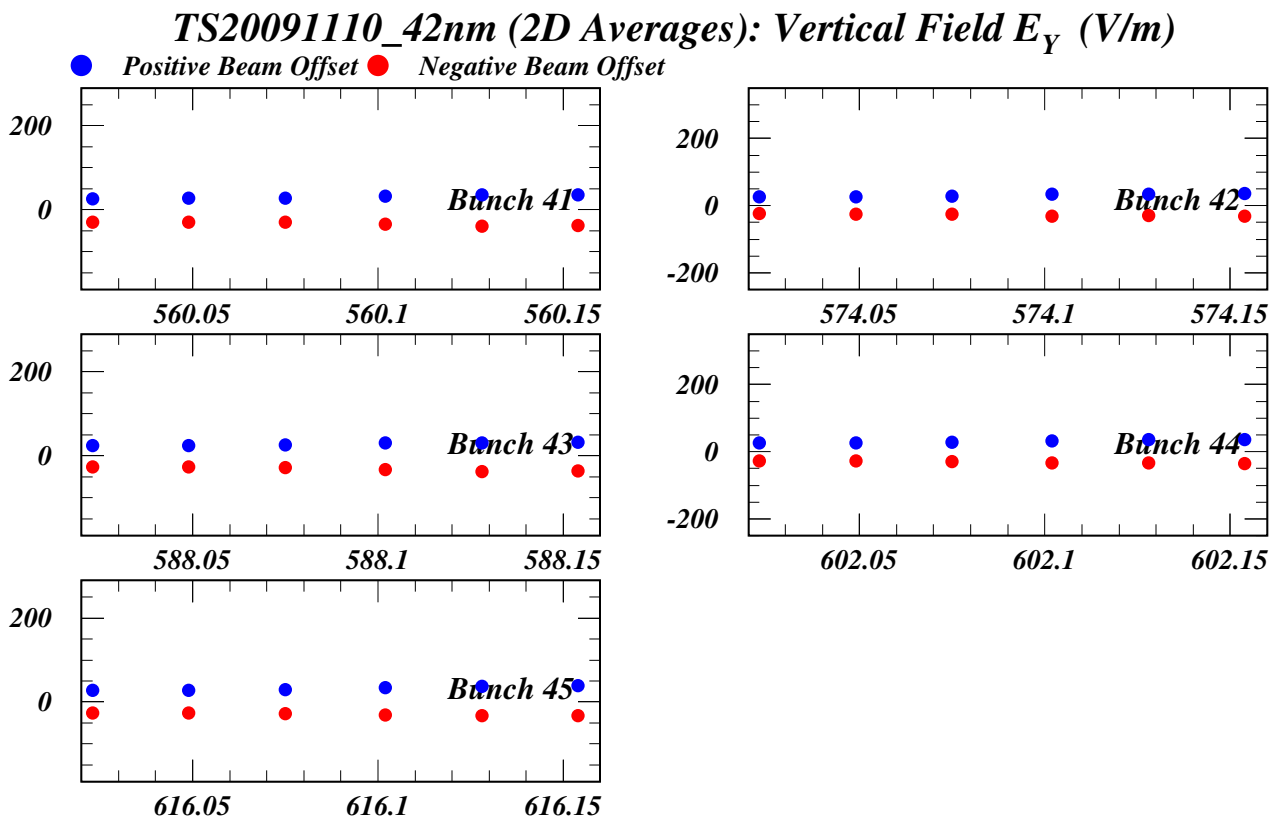

TS20091110_42nm (2D Averages): Horizontal Field E_X (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 41
Bunch 42
Bunch 43
Bunch 44
Bunch 45
20
0
-20
560.05
560.1
560.15
574.05
574.1
574.15
588.05
588.1
588.15
602.05
602.1
602.15
616.05
616.1
616.15

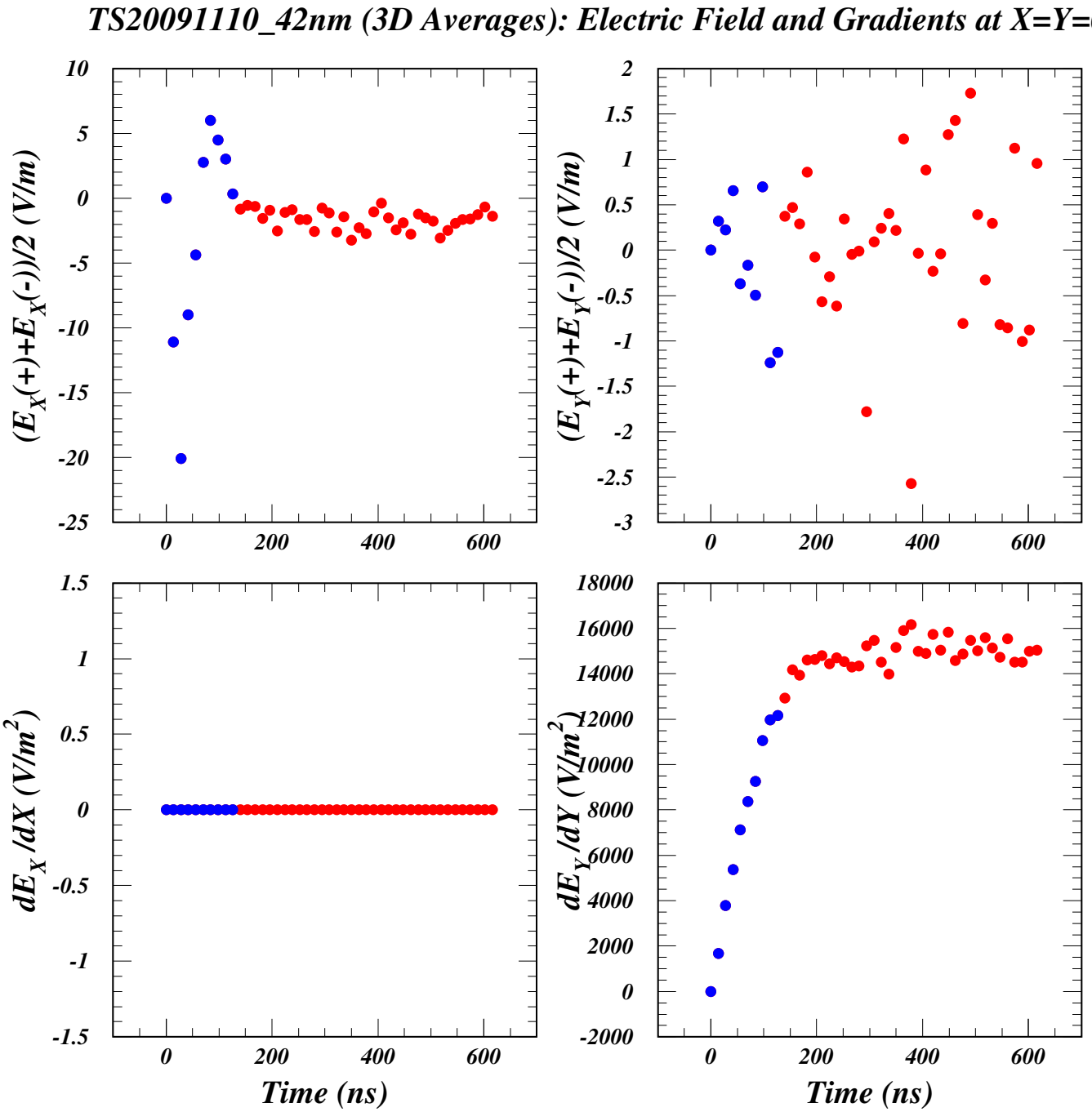

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
0.002
0
-0.002
10
0
-10
50
0
-50
100
0
-100
175
75
-25
-125
200
0
-200
0.05
0.1
0.15
14.05
14.1
14.15
28.05
28.1
28.15
42.05
42.1
42.15
56.05
56.1
56.15
70.05
70.1
70.15
84.05
84.1
84.15
98.05
98.1
98.15
112.05
112.1
112.15
126.05
126.1
126.15
Time (ns)
Time (ns)

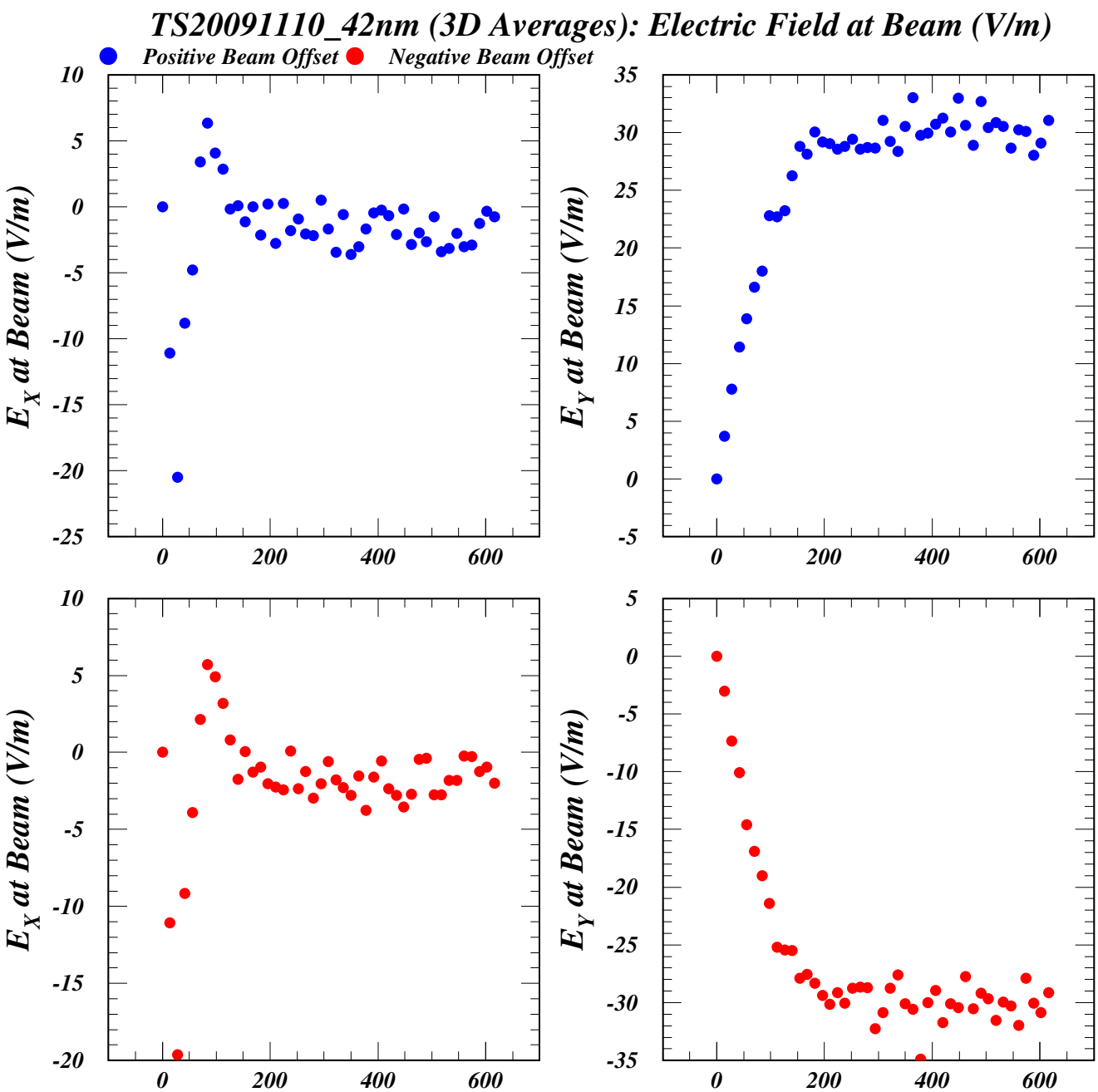

TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20
200
0
140.05
140.1
140.15
154.05
154.1
154.15
168.05
168.1
168.15
182.05
182.1
182.15
196.05
196.1
196.15
210.05
210.1
210.15
224.05
224.1
224.15
238.05
238.1
238.15
252.05
252.1
252.15
266.05
266.1
266.15
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 21
Bunch 22
Bunch 23
Bunch 24
Bunch 25
Bunch 26
Bunch 27
Bunch 28
Bunch 29
Bunch 30
200
0
280.05
280.1
280.15
294.05
294.1
294.15
308.05
308.1
308.15
322.05
322.1
322.15
336.05
336.1
336.15
350.05
350.1
350.15
364.05
364.1
364.15
378.05
378.1
378.15
392.05
392.1
392.15
406.05
406.1
406.15
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 31
Bunch 32
Bunch 33
Bunch 34
Bunch 35
Bunch 36
Bunch 37
Bunch 38
Bunch 39
Bunch 40
200
0
-200
420.05
420.1
420.15
434.05
434.1
434.15
448.05
448.1
448.15
462.05
462.1
462.15
476.05
476.1
476.15
490.05
490.1
490.15
504.05
504.1
504.15
518.05
518.1
518.15
532.05
532.1
532.15
546.05
546.1
546.15
Time (ns)
Time (ns)


TS20091110_42nm (2D Averages): Vertical Field E_Y (V/m)
Positive Beam Offset
Negative Beam Offset
Bunch 41
Bunch 42
Bunch 43
Bunch 44
Bunch 45
200
0
-200
560.05
560.1
560.15
574.05
574.1
574.15
588.05
588.1
588.15
602.05
602.1
602.15
616.05
616.1
616.15


TS20091110_42nm (3D Averages): Electric Field and Gradients at X=Y=0
(E_X(+)+E_X(-))/2 (V/m)
(E_Y(+)+E_Y(-))/2 (V/m)
dE_X/dX (V/m^2)
dE_Y/dY (V/m^2)
Time (ns)
Time (ns)


TS20091110_42nm (3D Averages): Electric Field at Beam (V/m)
Positive Beam Offset
Negative Beam Offset
E_X at Beam (V/m)
E_Y at Beam (V/m)
E_X at Beam (V/m)
E_Y at Beam (V/m)
10
5
0
-5
-10
-15
-20
-25
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
0
200
400
600