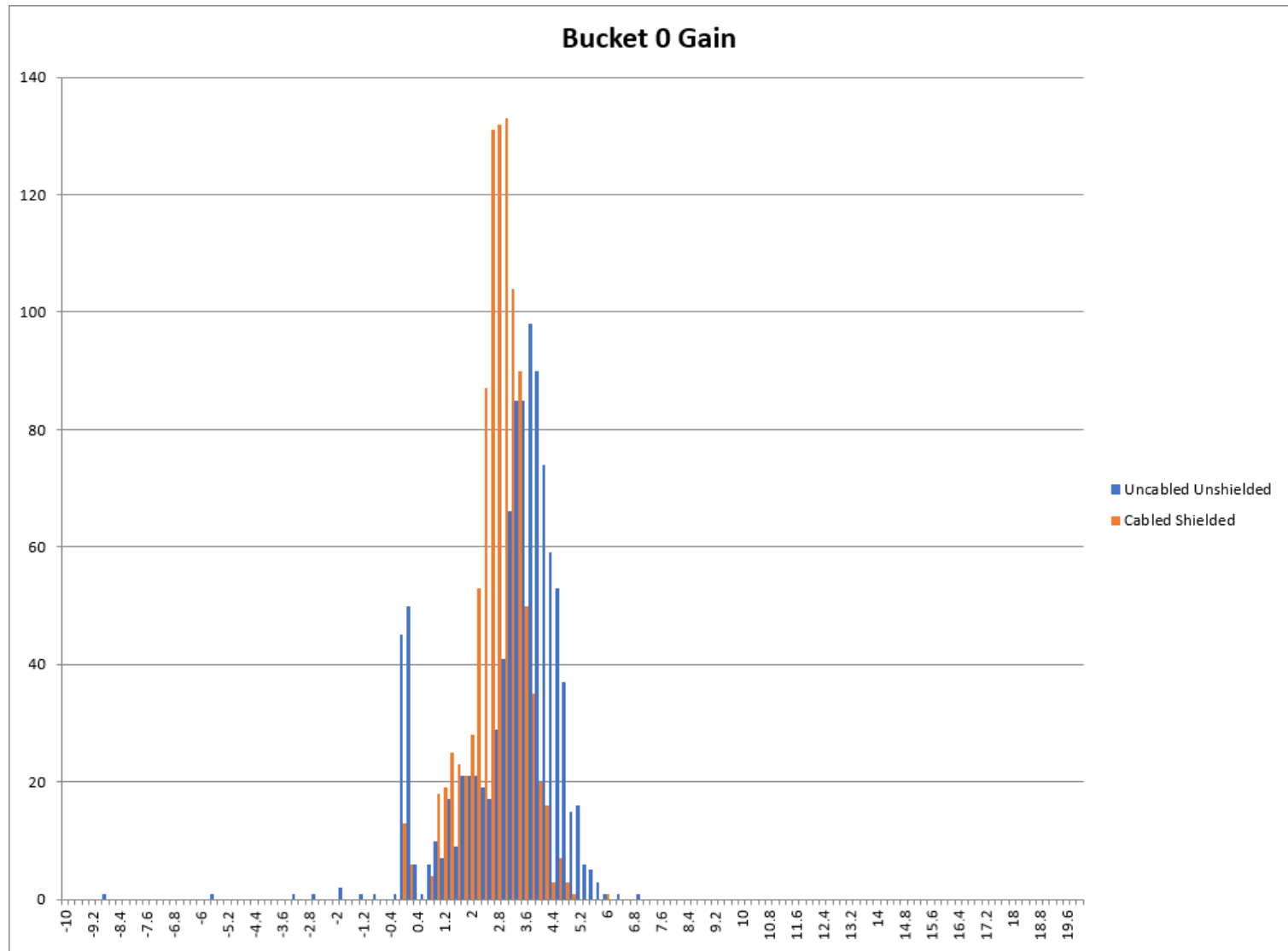


Cabled Shielded Detector Crosstalk Study

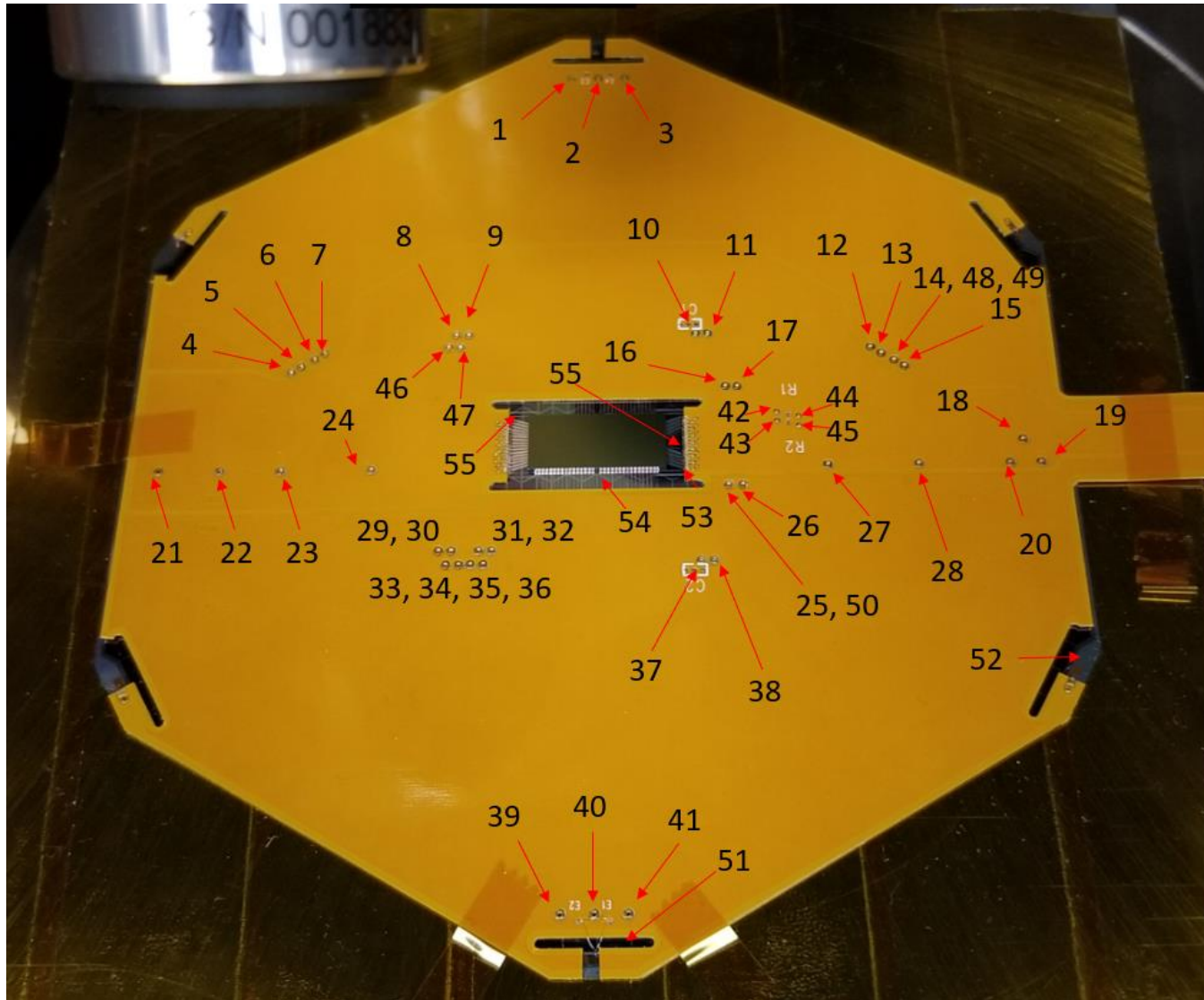
5/5/2020



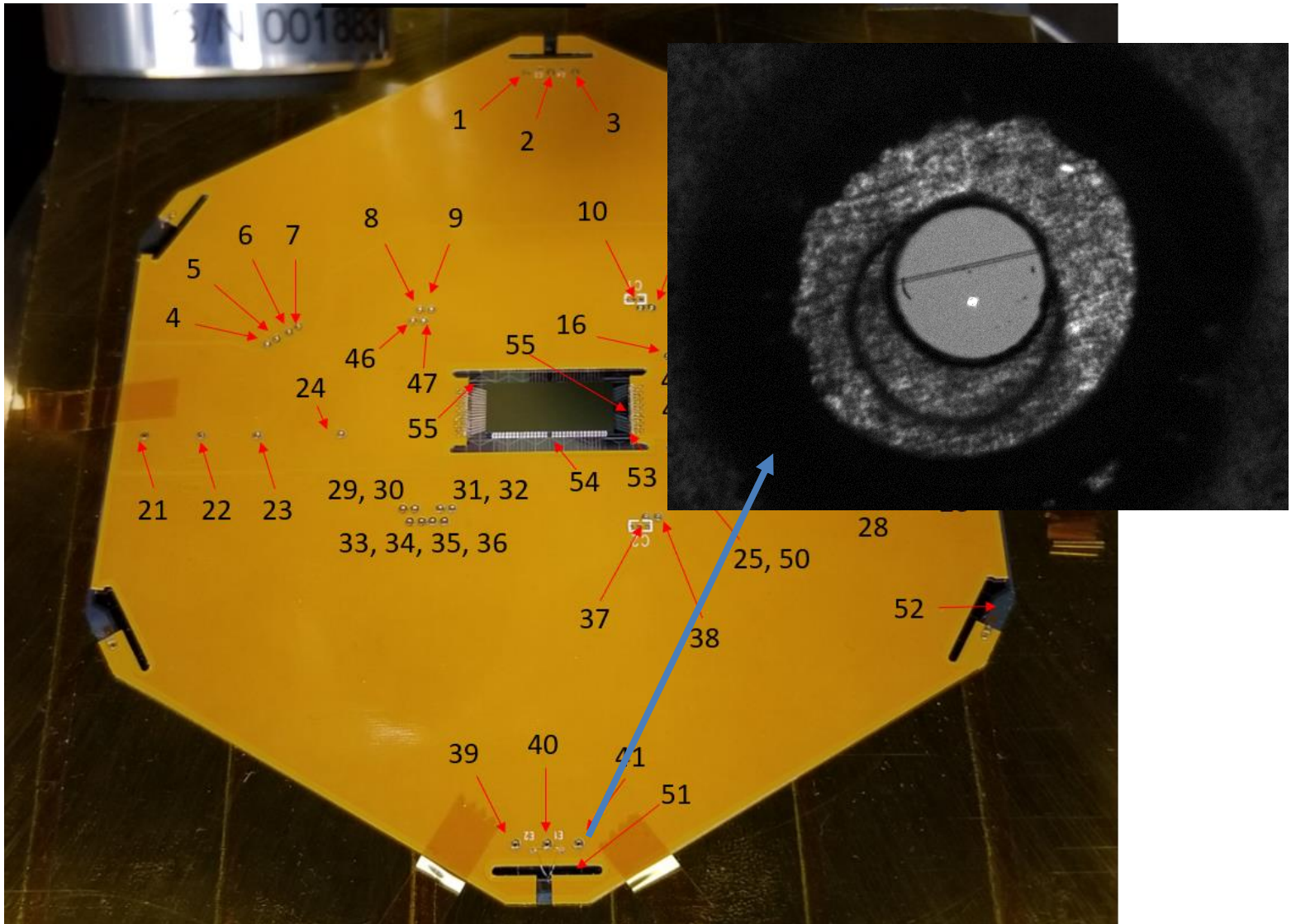
Center for High Energy Physics



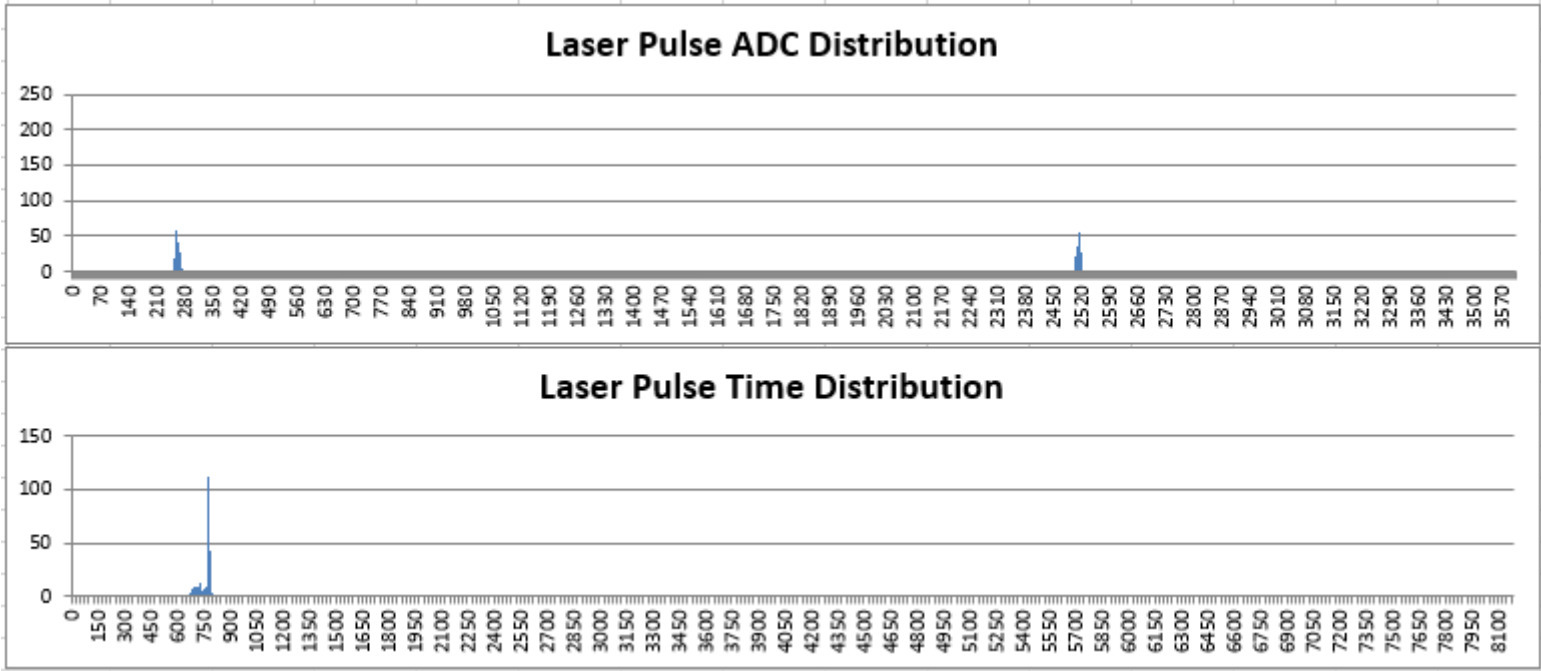
Center for High Energy Physics



Center for High Energy Physics



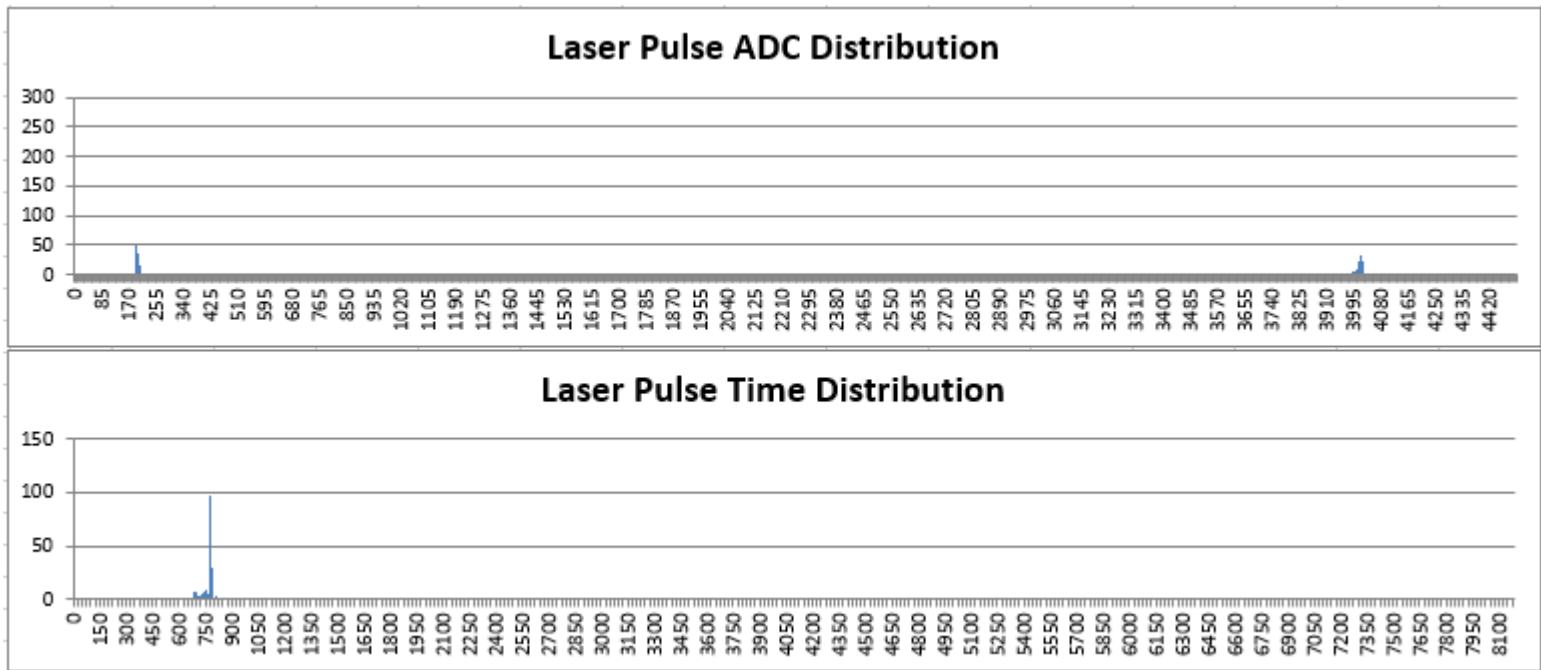
Uncabled
Unshielded



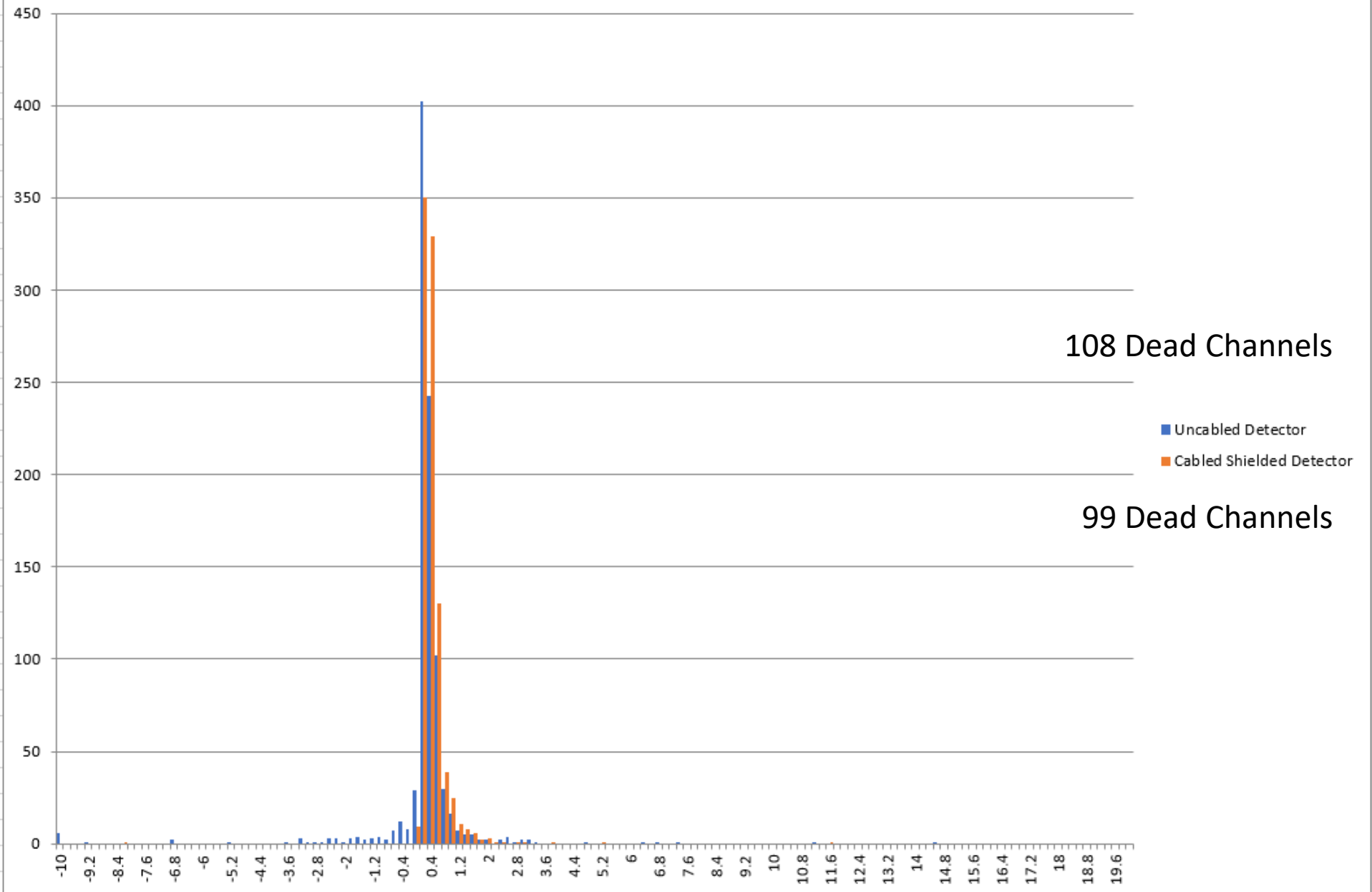
Gain ~ 4 - Metallization Gone



Cabled
Shielded



Crosstalk (%) Distribution Fine

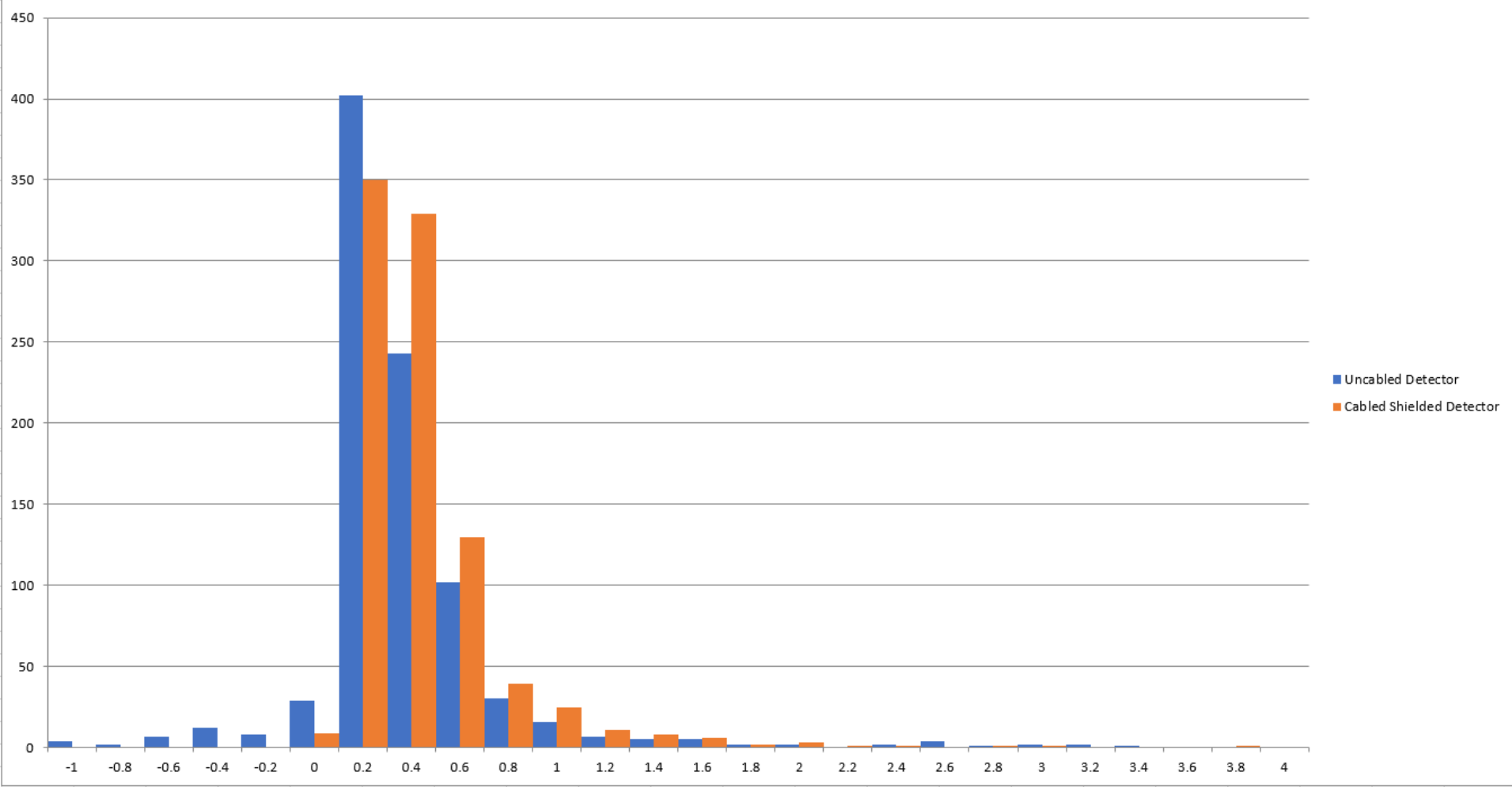


108 Dead Channels

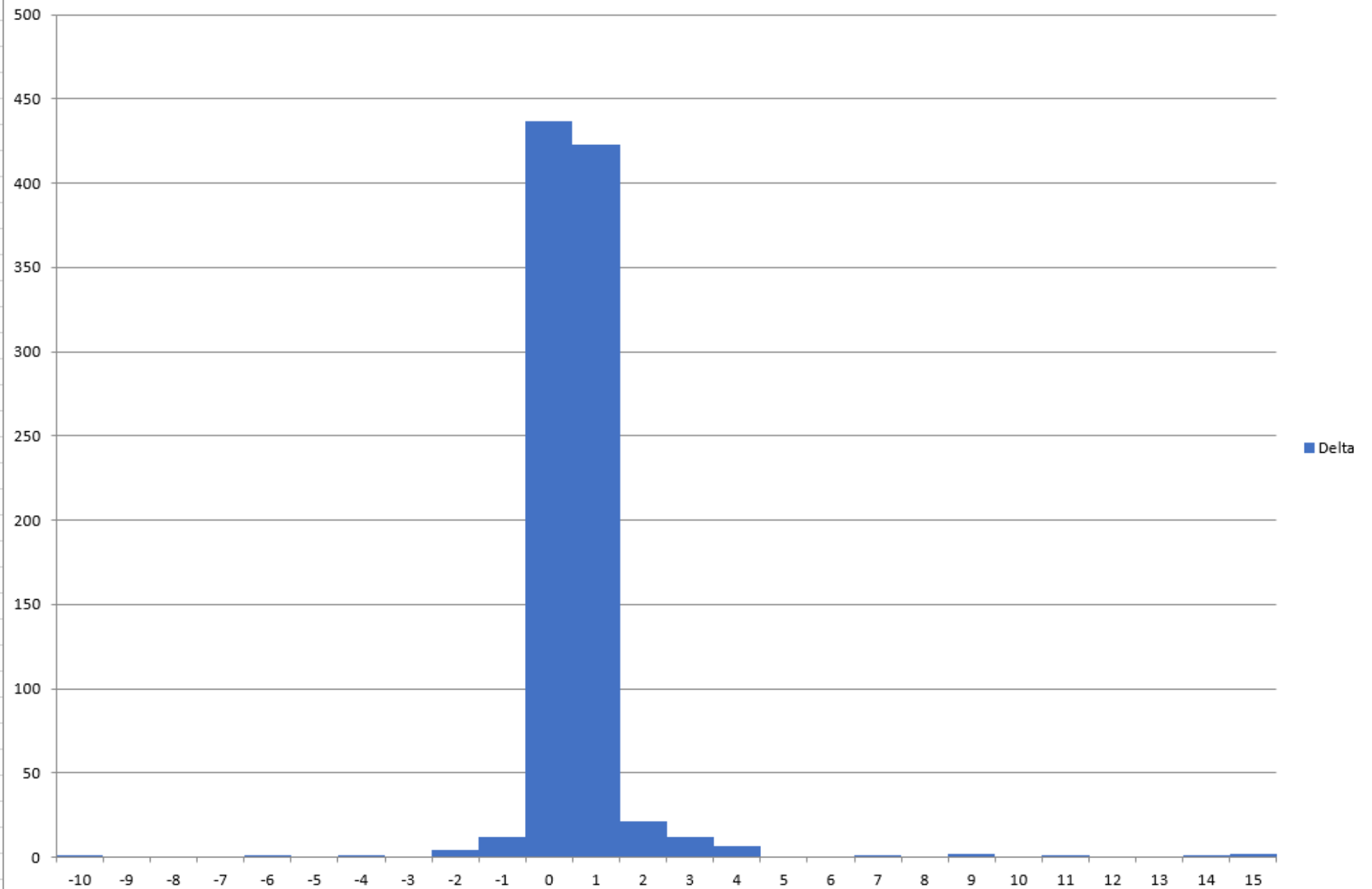
■ Uncabled Detector
■ Cabled Shielded Detector

99 Dead Channels

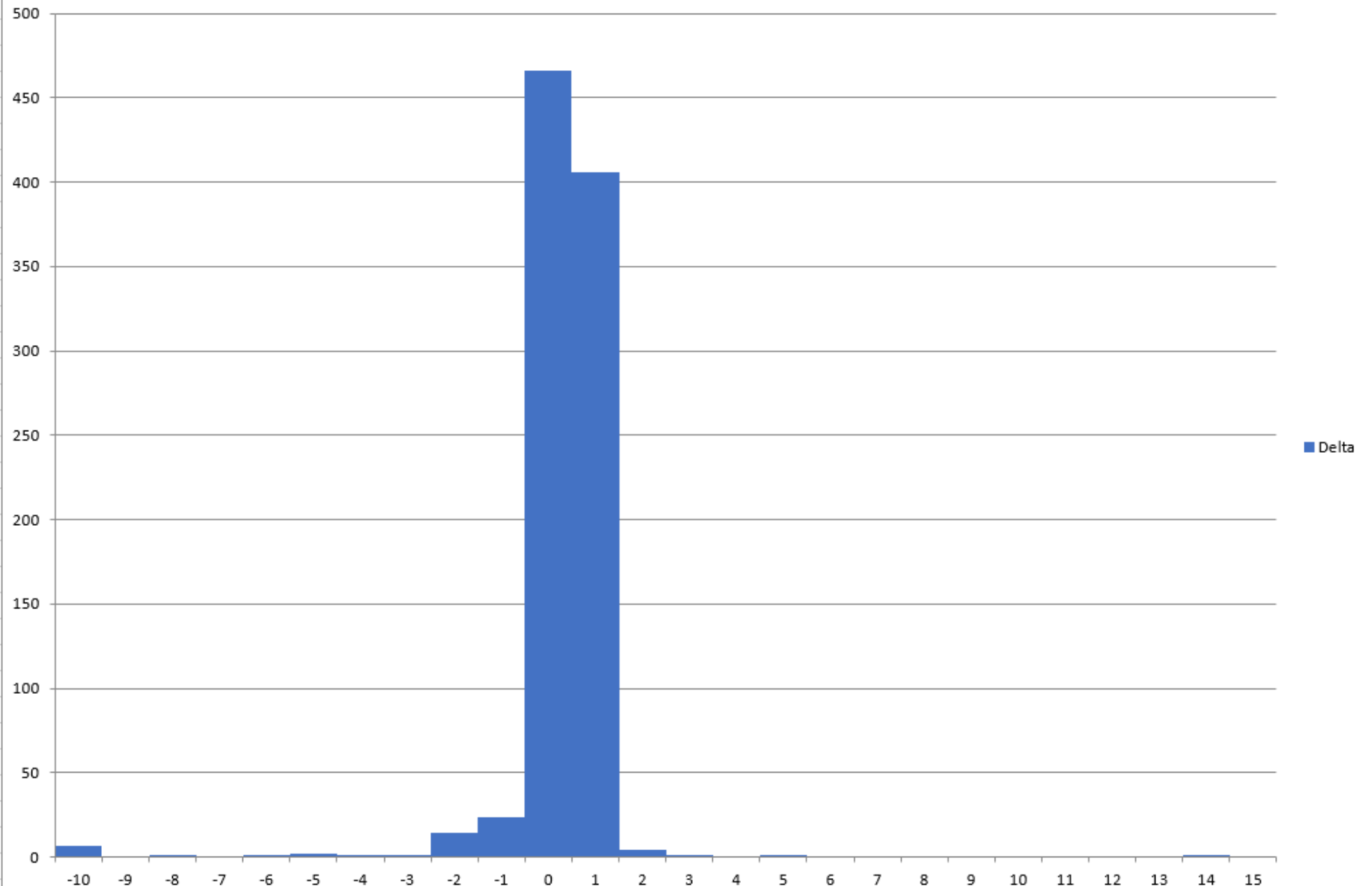
Crosstalk (%) Distribution Fine



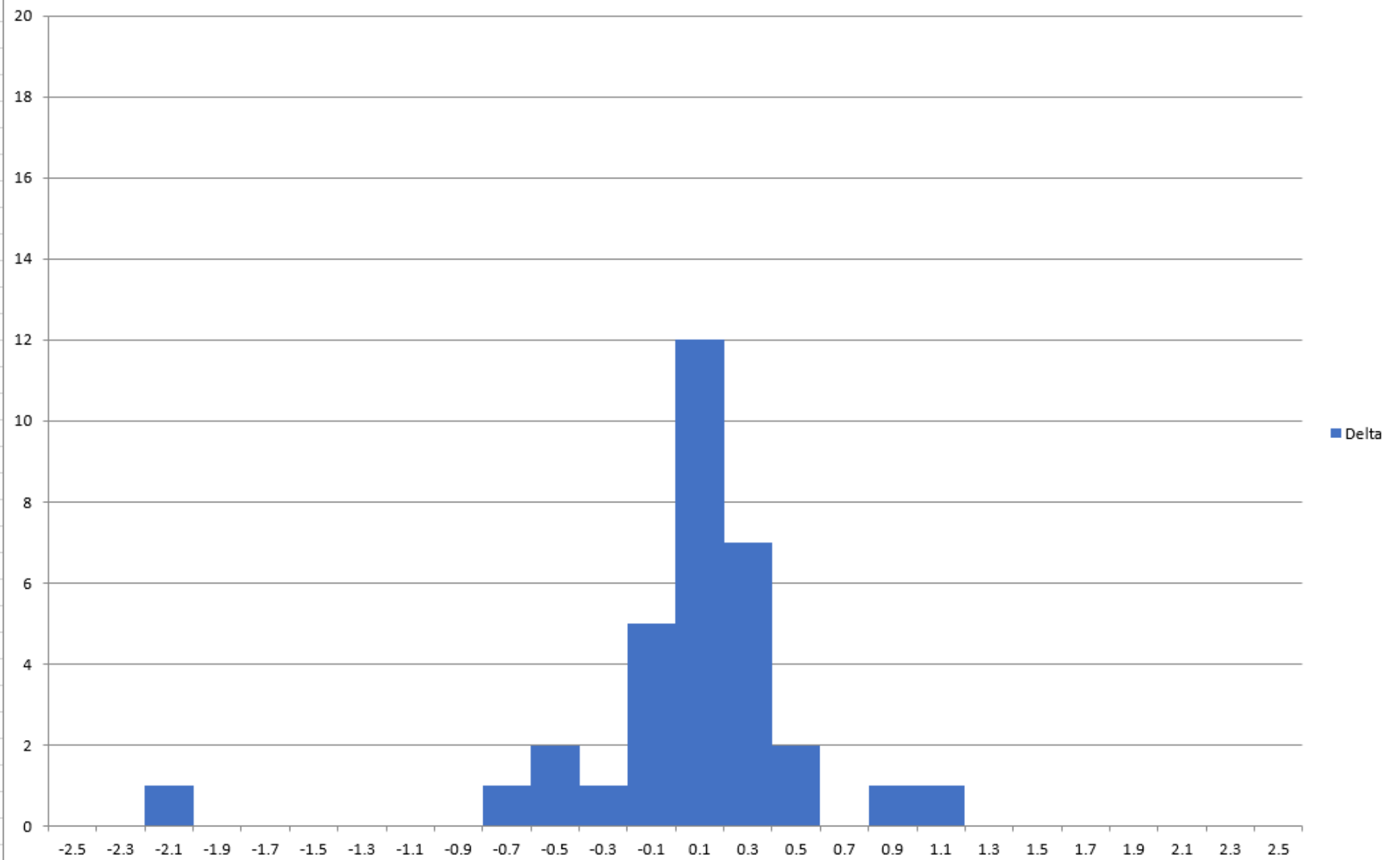
Crosstalk Delta Distribution



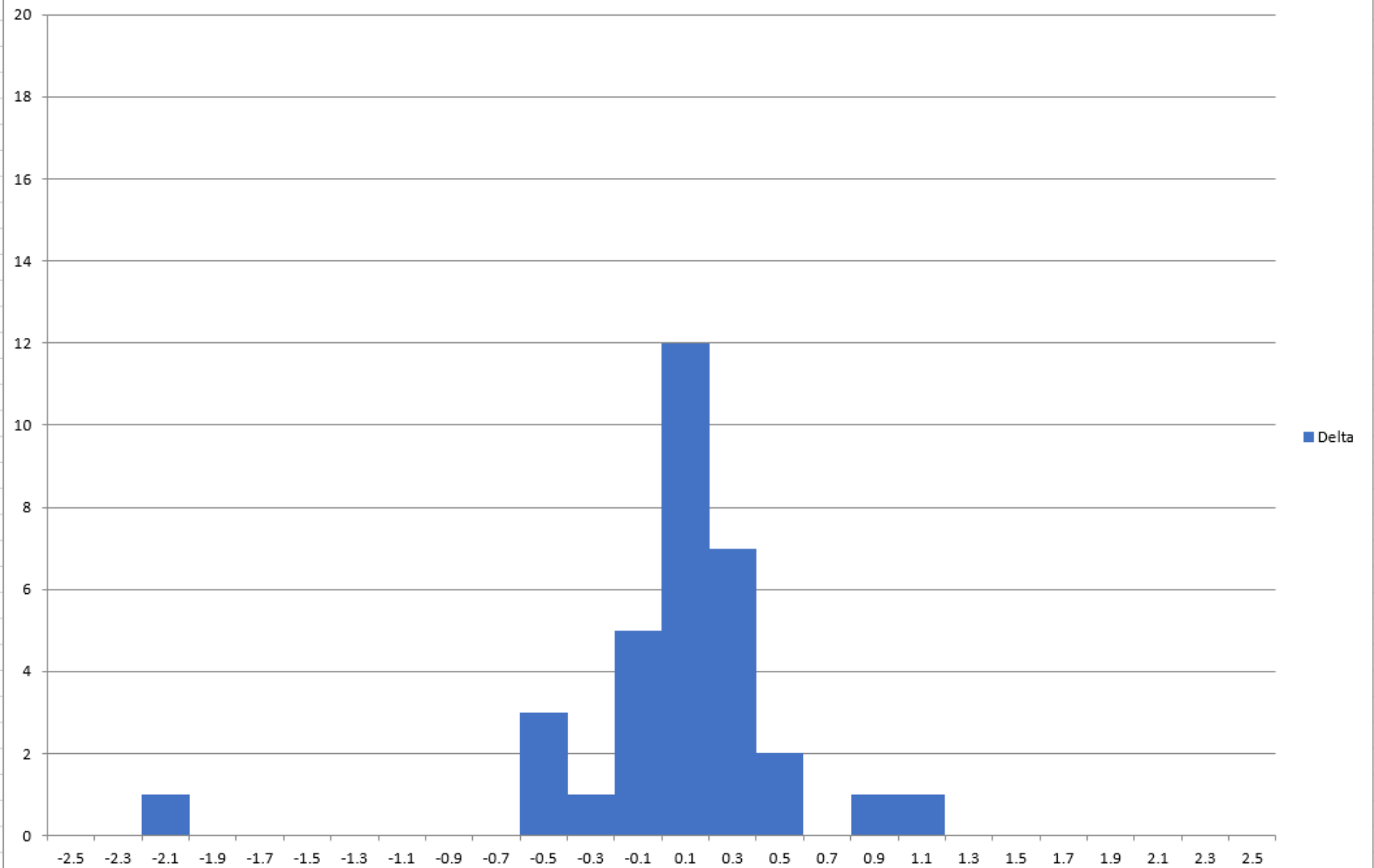
Crosstalk Absolute Value Delta Distribution



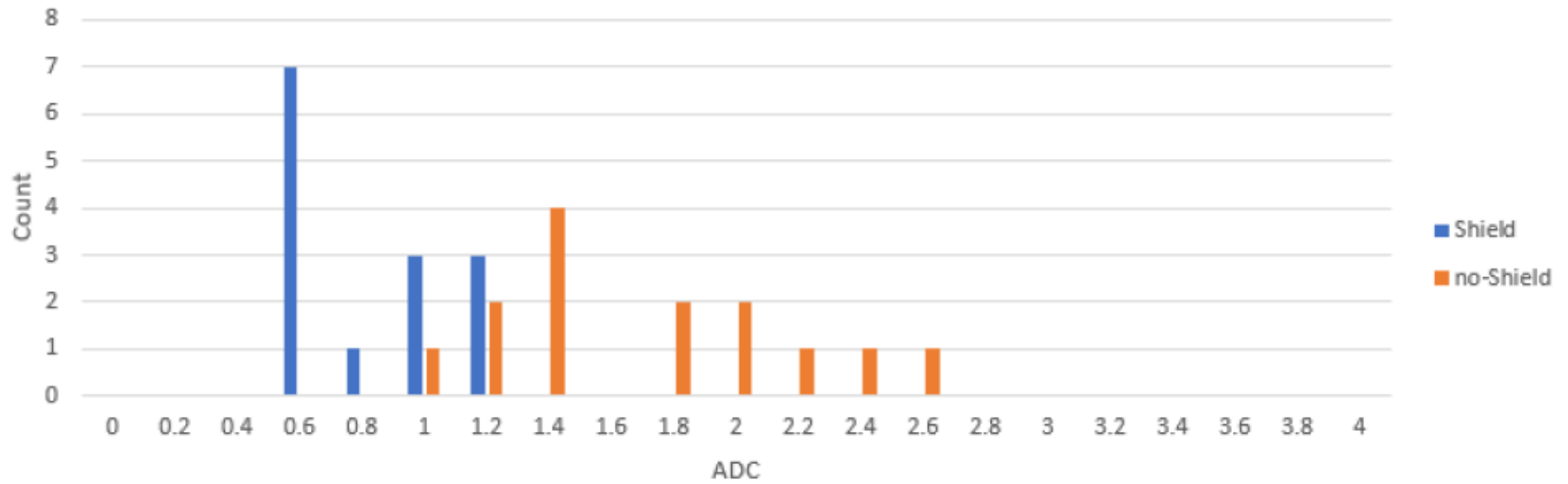
Crosstalk Delta Distribution



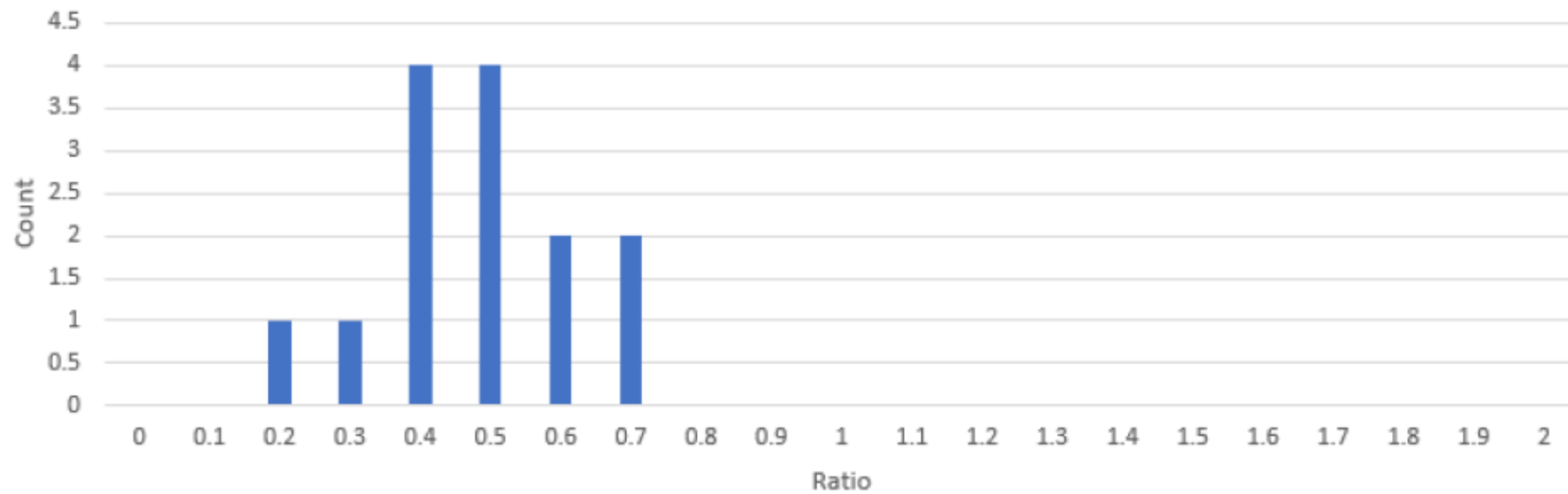
Crosstalk Absolute Value Delta Distribution



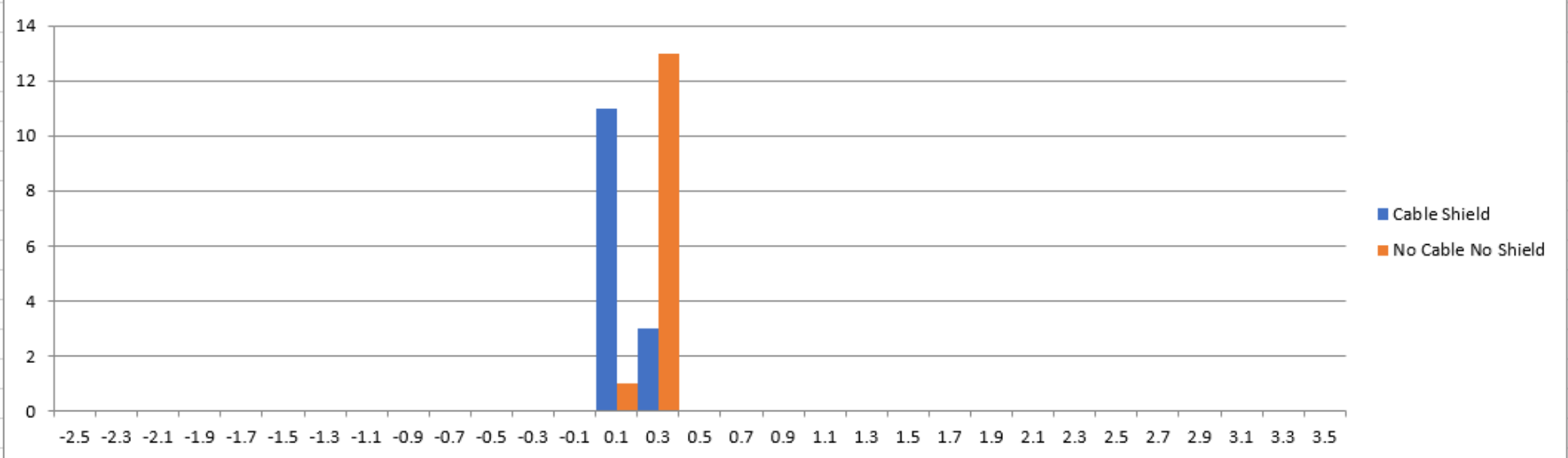
Crosstalk Distribution Trace-Connections Only (per 1000 ADC)



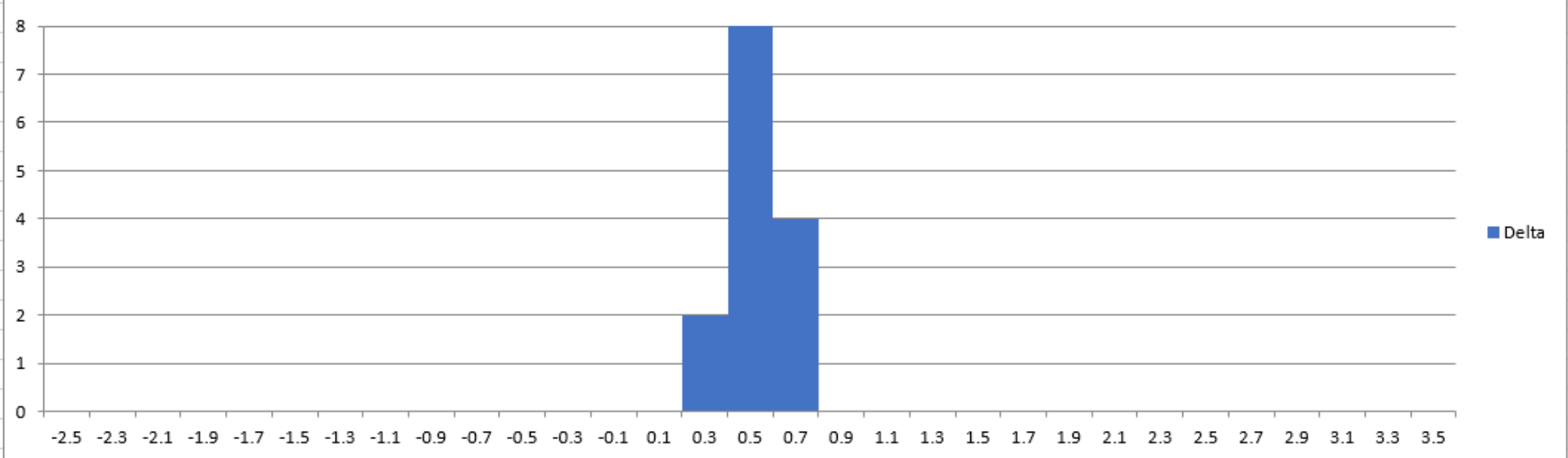
Ratio of Shield Crosstalk to no-Shield Crosstalk (Trace Connections Only)



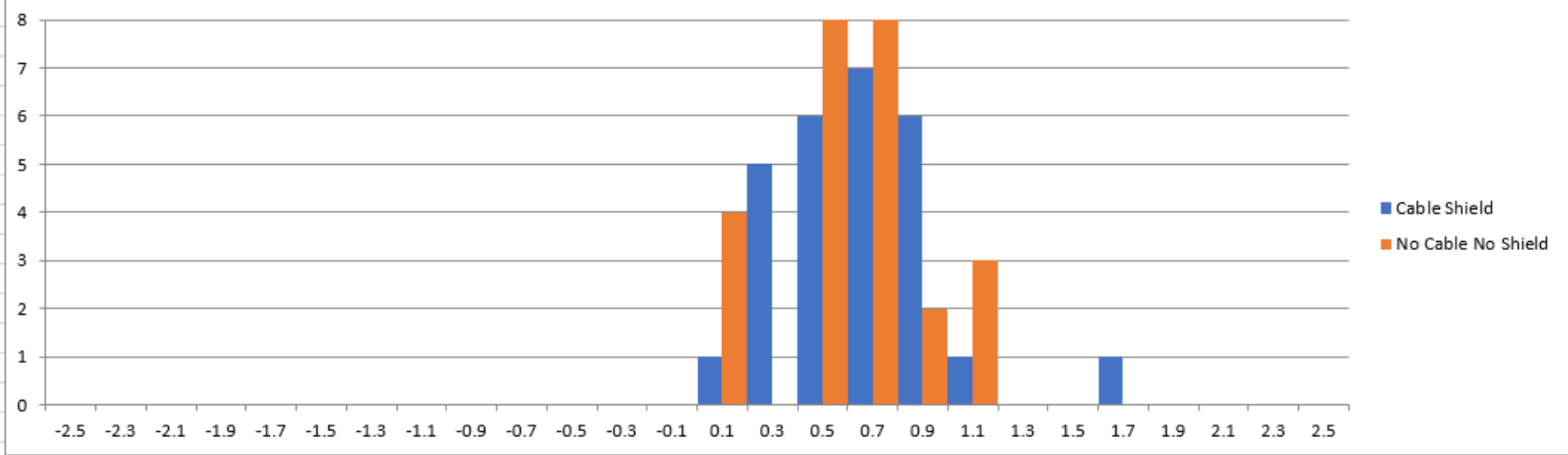
Crosstalk Ratio (Cable Shield to No Cable No Shield) Distribution



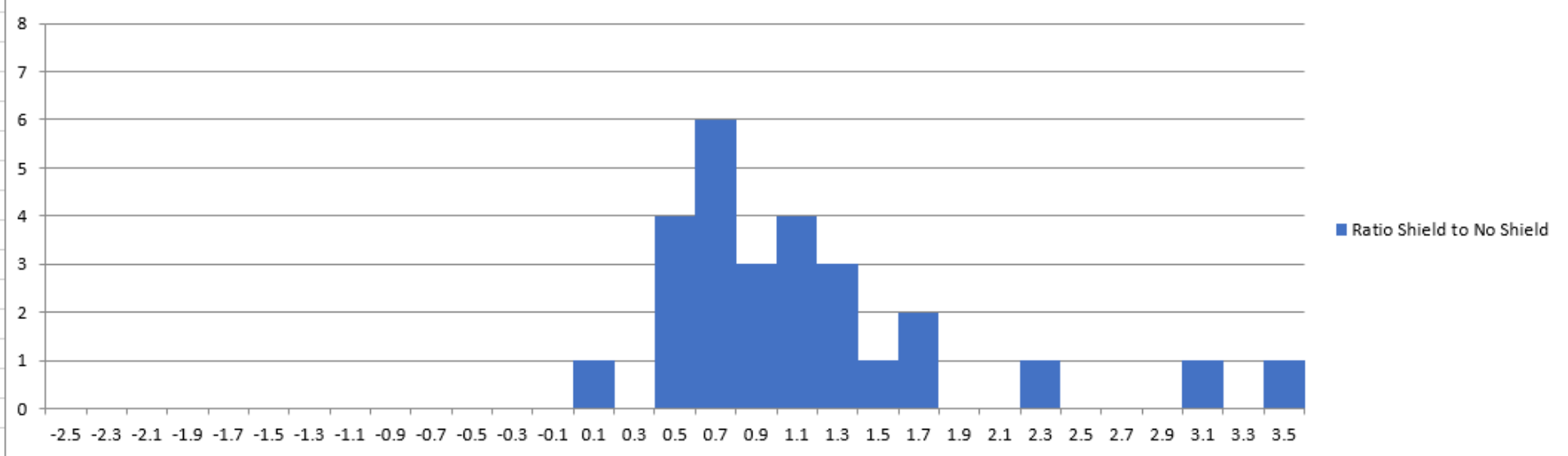
Crosstalk Ratio (No Cable Shield to No Cable No Shield) Distribution



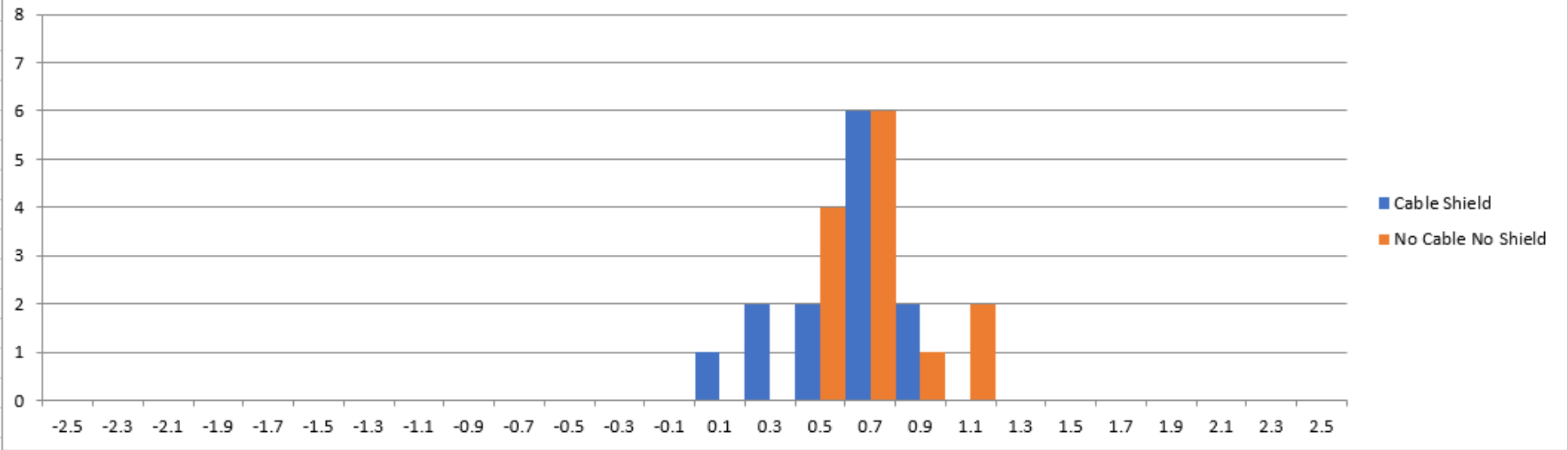
Crosstalk Distribution



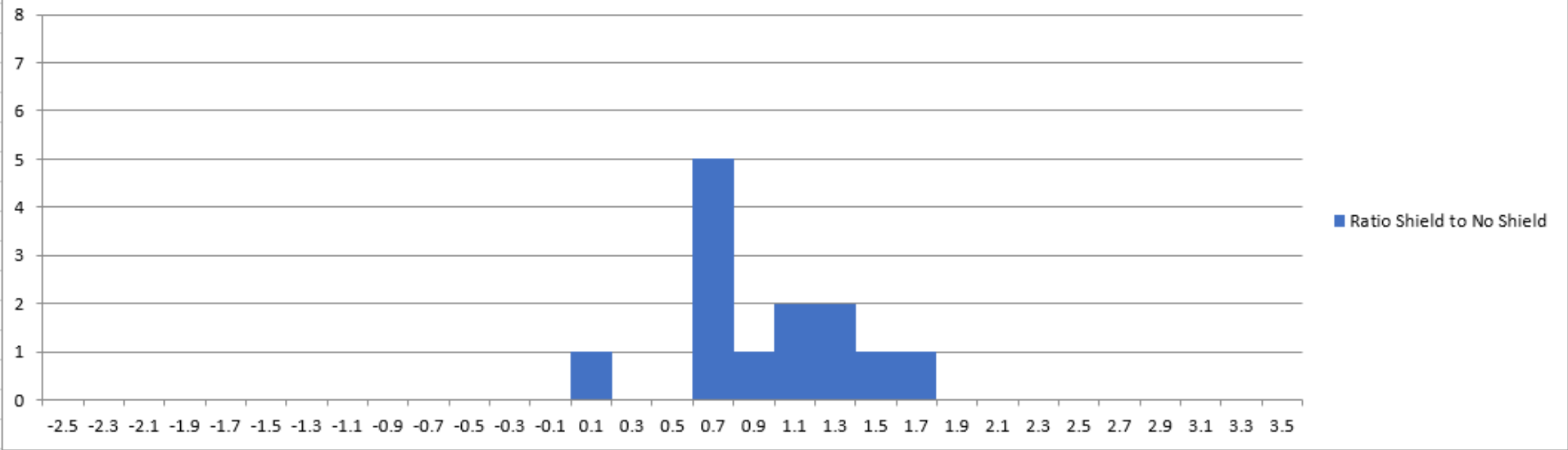
Crosstalk Ratio (Cable Shield to No Cable No Shield) Distribution



Crosstalk Distribution



Crosstalk Ratio (Cable Shield to No Cable No Shield) Distribution



| GUI Channel | Event | Time | ADC | Energy | 493 | 176733 | 779 | 4015 | NaN | 0 | 969.80676 | 969.80676 |
|-------------|-------|------|------|--------|-----|--------|-----|------|-----|---|-----------|-----------|
| 493 | 2500 | 762 | 202 | NaN | 493 | 176734 | 774 | 195 | NaN | 0 | 47.101449 | 47.101449 |
| 493 | 2501 | 762 | 606 | NaN | 493 | 176737 | 778 | 3995 | NaN | 0 | 964.97585 | 964.97585 |
| 493 | 2502 | 762 | 188 | NaN | 493 | 176738 | 743 | 200 | NaN | 0 | 48.309179 | 48.309179 |
| 493 | 2503 | 762 | 196 | NaN | 493 | 176741 | 781 | 4010 | NaN | 0 | 968.59903 | 968.59903 |
| 493 | 2504 | 762 | 191 | NaN | 493 | 176742 | 726 | 204 | NaN | 0 | 49.275362 | 49.275362 |
| 493 | 2505 | 762 | 311 | NaN | 493 | 176745 | 779 | 4011 | NaN | 0 | 968.84058 | 968.84058 |
| 493 | 2506 | 762 | 194 | NaN | 493 | 176746 | 692 | 199 | NaN | 0 | 48.067633 | 48.067633 |
| 493 | 2507 | 762 | 2385 | NaN | 493 | 176753 | 779 | 4015 | NaN | 0 | 969.80676 | 969.80676 |
| 493 | 2508 | 762 | 189 | NaN | 493 | 176754 | 682 | 193 | NaN | 0 | 46.618357 | 46.618357 |
| 493 | 2509 | 762 | 195 | NaN | 493 | 176757 | 777 | 4012 | NaN | 0 | 969.08213 | 969.08213 |
| 493 | 2510 | 762 | 192 | NaN | 493 | 176758 | 808 | 203 | NaN | 0 | 49.033816 | 49.033816 |
| 493 | 2511 | 762 | 193 | NaN | 493 | 176761 | 780 | 4007 | NaN | 0 | 967.8744 | 967.8744 |
| 493 | 2512 | 762 | 191 | NaN | 493 | 176762 | 682 | 194 | NaN | 0 | 46.859903 | 46.859903 |
| 493 | 2513 | 762 | 200 | NaN | 493 | 176769 | 778 | 4013 | NaN | 0 | 969.32367 | 969.32367 |
| 493 | 2514 | 762 | 191 | NaN | 493 | 176770 | 682 | 200 | NaN | 0 | 48.309179 | 48.309179 |
| 493 | 2515 | 762 | 187 | NaN | 493 | 176773 | 777 | 4015 | NaN | 0 | 969.80676 | 969.80676 |
| 493 | 2516 | 762 | 193 | NaN | 493 | 176774 | 741 | 195 | NaN | 0 | 47.101449 | 47.101449 |
| 493 | 2517 | 762 | 291 | NaN | 493 | 176777 | 779 | 3979 | NaN | 0 | 961.11111 | 961.11111 |
| 493 | 2518 | 762 | 194 | NaN | 493 | 176778 | 775 | 192 | NaN | 0 | 46.376812 | 46.376812 |
| 493 | 2519 | 762 | 195 | NaN | 493 | 176781 | 778 | 4018 | NaN | 0 | 970.5314 | 970.5314 |
| 493 | 2520 | 762 | 196 | NaN | 493 | 176782 | 761 | 197 | NaN | 0 | 47.584541 | 47.584541 |
| 493 | 2521 | 762 | 202 | NaN | 493 | 176789 | 777 | 4000 | NaN | 0 | 966.18357 | 966.18357 |
| 493 | 2522 | 762 | 192 | NaN | 493 | 176790 | 684 | 197 | NaN | 0 | 47.584541 | 47.584541 |
| 493 | 2523 | 762 | 186 | NaN | 493 | 176793 | 780 | 4001 | NaN | 0 | 966.42512 | 966.42512 |
| 493 | 2524 | 762 | 194 | NaN | 493 | 176794 | 626 | 189 | NaN | 0 | 45.652174 | 45.652174 |
| 493 | 2525 | 762 | 194 | NaN | 493 | 176797 | 780 | 4008 | NaN | 0 | 968.11594 | 968.11594 |
| 493 | 2526 | 762 | 197 | NaN | 493 | 176798 | 752 | 195 | NaN | 0 | 47.101449 | 47.101449 |
| 493 | 2527 | 762 | 189 | NaN | 493 | 176801 | 781 | 4010 | NaN | 0 | 968.59903 | 968.59903 |
| 493 | 2528 | 762 | 196 | NaN | 493 | 176802 | 696 | 200 | NaN | 0 | 48.309179 | 48.309179 |
| 493 | 2529 | 762 | 1437 | NaN | 493 | 176805 | 780 | 4008 | NaN | 0 | 968.11594 | 968.11594 |
| 493 | 2530 | 762 | 201 | NaN | 493 | 176806 | 723 | 201 | NaN | 0 | 48.550725 | 48.550725 |
| 493 | 2531 | 762 | 2711 | NaN | 493 | 176813 | 778 | 3981 | NaN | 0 | 961.5942 | 961.5942 |
| 493 | 2532 | 762 | 200 | NaN | 493 | 176814 | 754 | 196 | NaN | 0 | 47.342995 | 47.342995 |
| 493 | 2533 | 762 | 201 | NaN | 493 | 176817 | 780 | 4011 | NaN | 0 | 968.84058 | 968.84058 |
| 493 | 2534 | 762 | 191 | NaN | 493 | 176818 | 752 | 198 | NaN | 0 | 47.826087 | 47.826087 |
| 493 | 2535 | 762 | 197 | NaN | 493 | 176821 | 778 | 4018 | NaN | 0 | 970.5314 | 970.5314 |
| 493 | 2536 | 762 | 1987 | NaN | 493 | 176822 | 660 | 203 | NaN | 0 | 49.033816 | 49.033816 |

