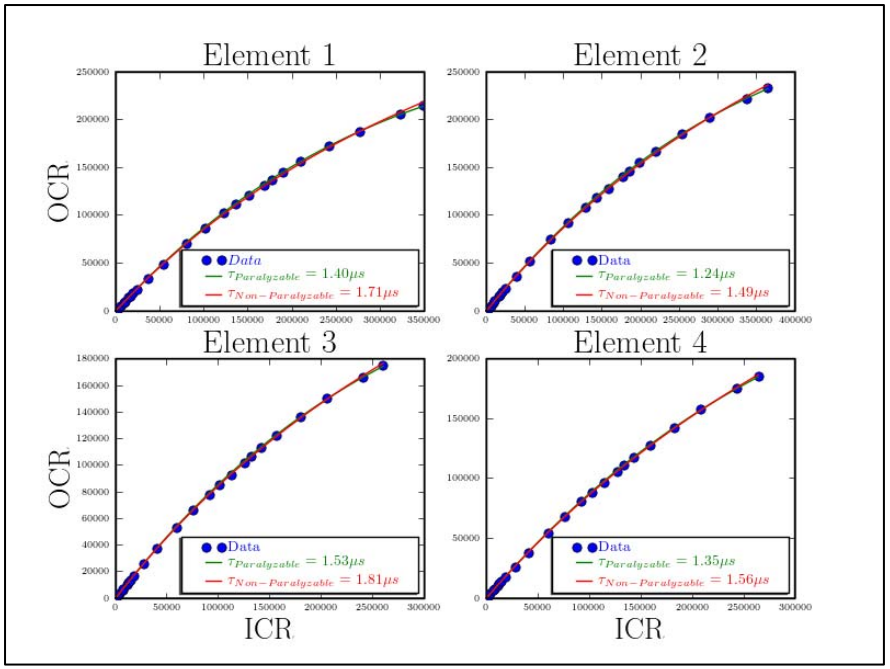
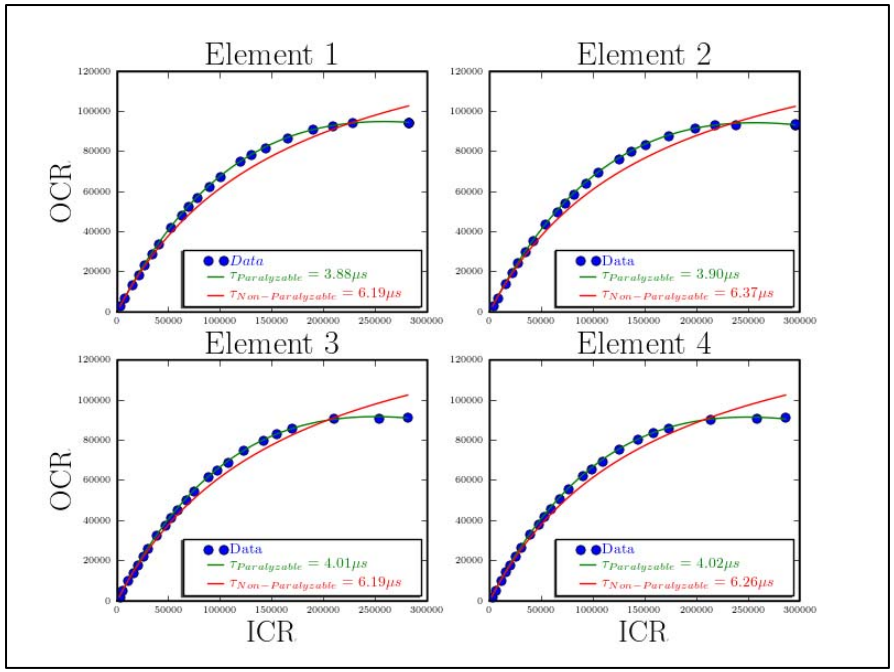
Vortex 4-element SDD Throughput

Peaking Time = 0.25 us
Gap Time = 0.2 us
Mn Ka FWHM ~ 250eV



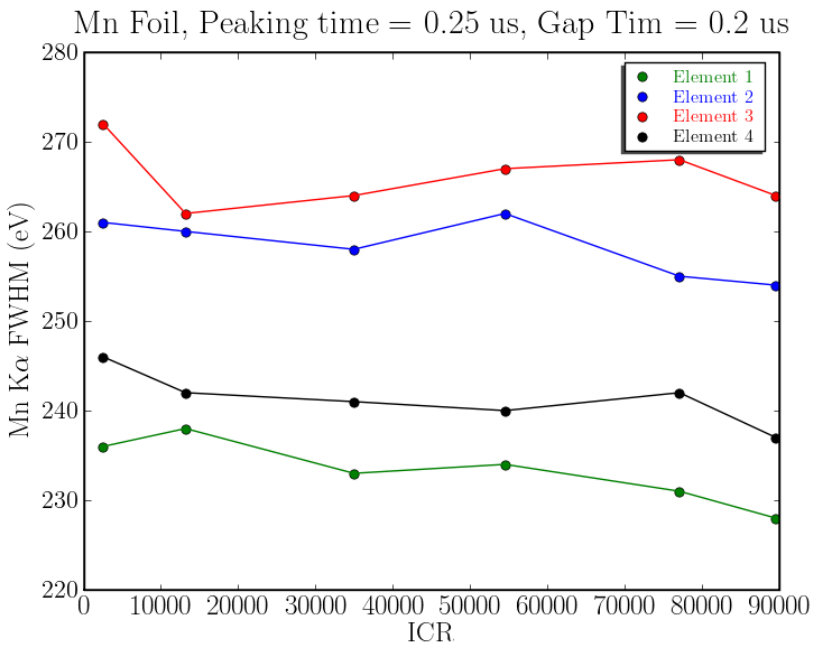
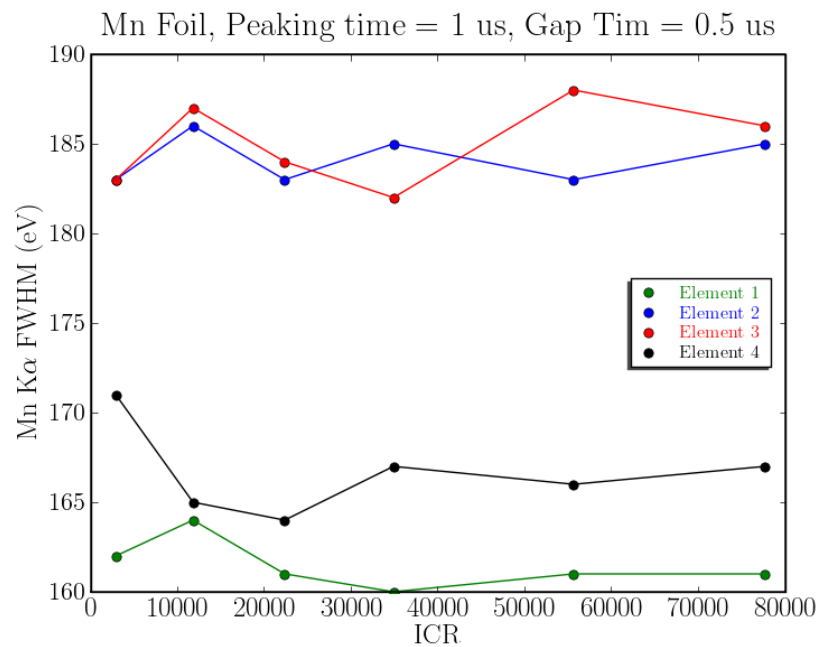
The maximum count rate from the paralyzable model is equal to (1/t * *e*), where t is the deadtime (t = {1.4, 1.24, 1.53, 1.35 μs}). So the maximum count rate at a PT = 0.25 ms and GT = 0.2 μs for the 4-elements are: (262, 296, 240, 272) kHz for a maximum count rate for all 4-elements combined to be ~ **1 MHz.**

Peaking Time = 1.0 us
Gap Time = 0.5 us
Mn Ka FWHM ~ 175eV



The paralyzable deadtimes are: (t = {3.88, 3.90, 4.01, 4.02 ms}). The maximum count rate at a PT = 1.0 μs and GT = 0.5 μs for the 4-elements are: (94, 94, 91, 91) kHz for a maximum count rate for all 4-elements combined to be **370 kHz.**

FWHM of the Mn Kα (Fe-55) line using various Peaking and Gap Time settings, using the XMAP electronics

PT (μs) / GT (μs)	FWHM(eV) Channel #1	# 2	# 3	# 4
0.26 / 0.2	254	273	224	204
0.5 / 0.25	201	228	224	204
1.0 / 0.5	163	186	186	174
4.0 / 1.0	138	158	149	151

Tests at Beamline 9-BM in June 2007