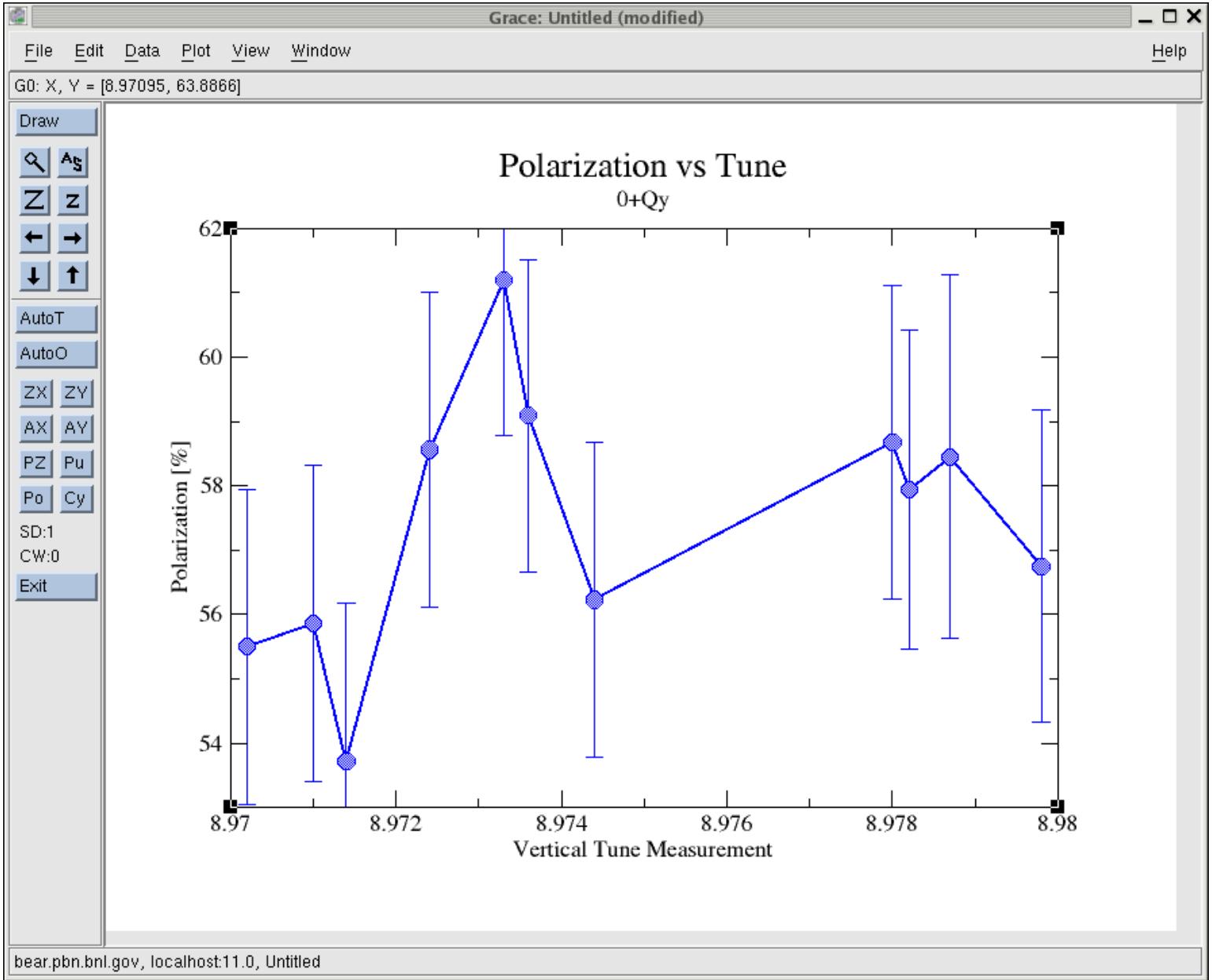
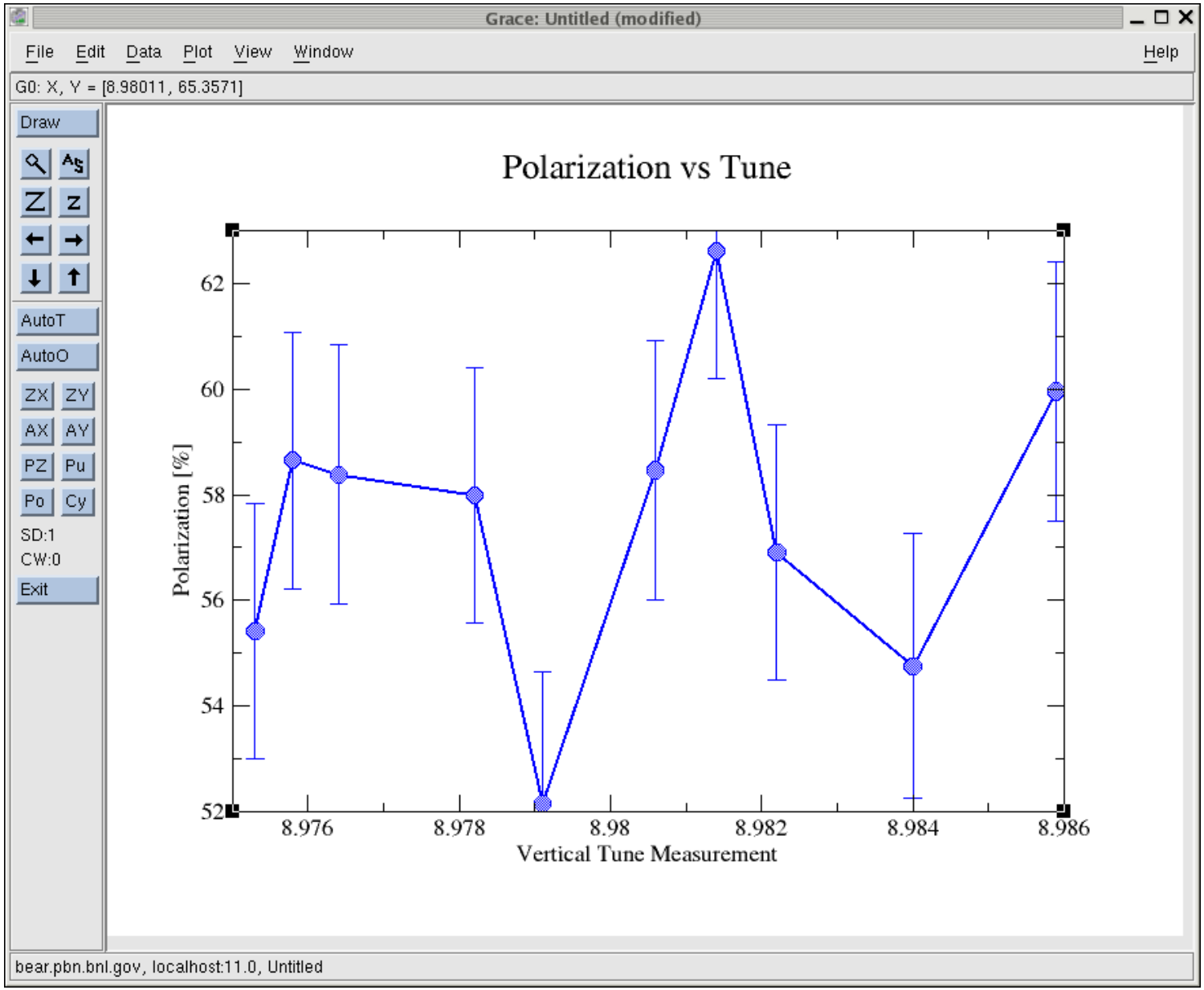
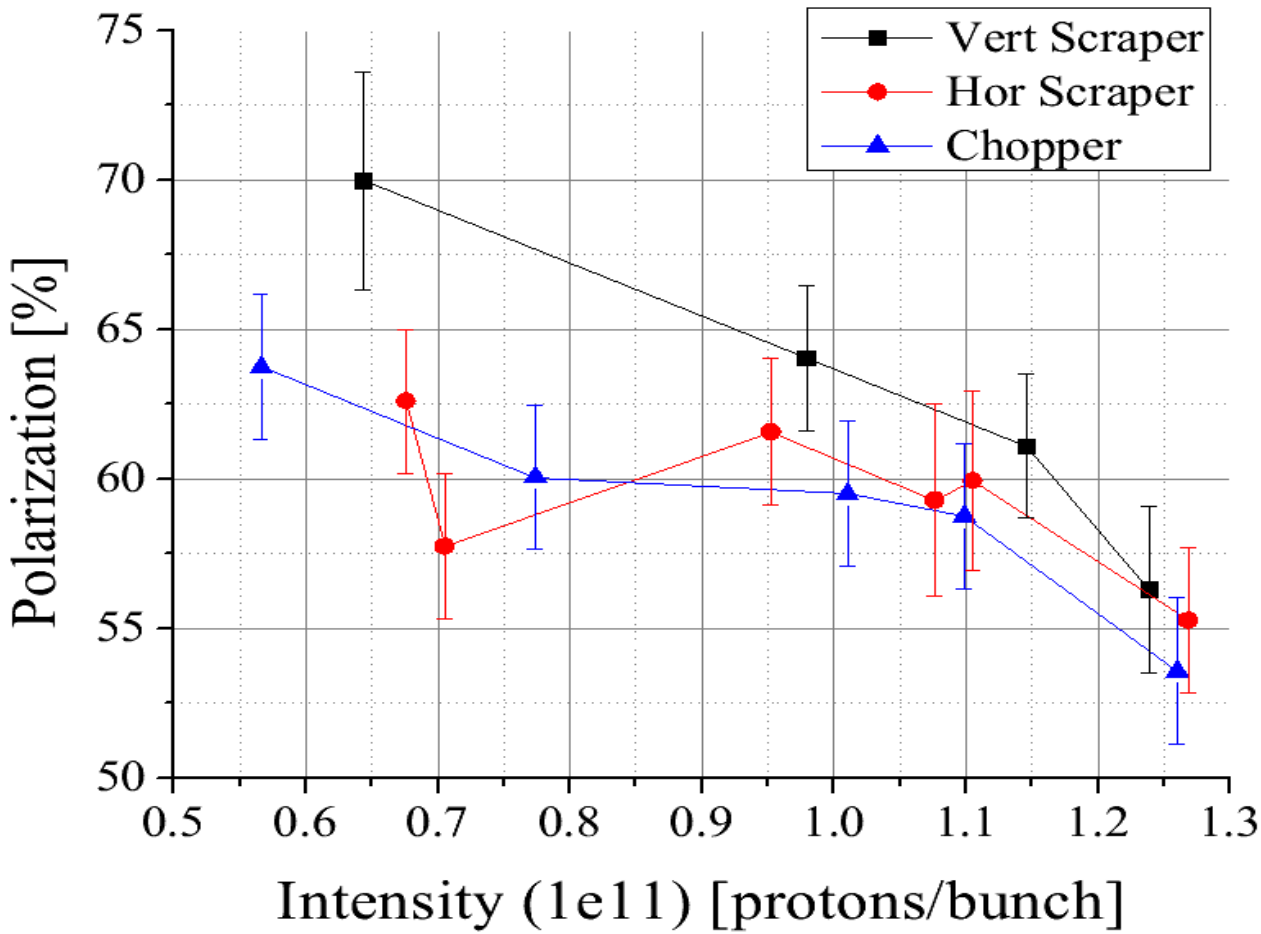
AGS Vertical Tune Scan at 0+



AGS Vertical Tune Scan at 36+



AGS Intensity Scan



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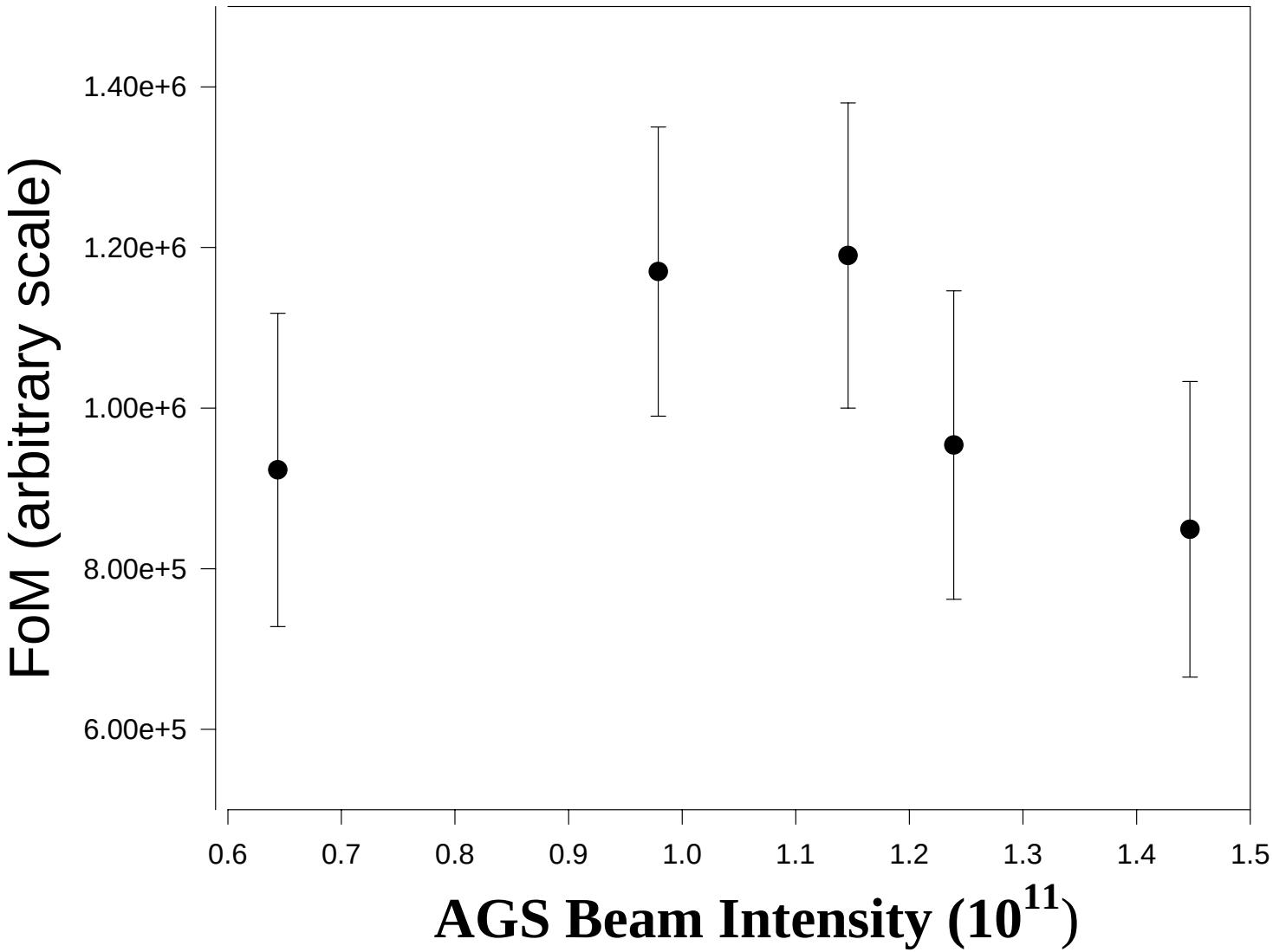
AGS Running Figure of Merit

$$FoM \propto I^2 * P^4 / (\varepsilon_x * \varepsilon_y)^{1/2}$$

Intensity	Pol.	Err.	Emit_x	Emi_y	FoM	FoM Err.
1.447	52.00	2.81	17.82	18.25	8.49E+05	1.84E+05
1.239	56.30	2.81	16.25	16.08	9.54E+05	1.92E+05
1.146	61.10	2.40	15.54	15.11	1.19E+06	1.90E+05
0.979	64.05	2.44	14.28	13.37	1.17E+06	1.80E+05
0.644	69.97	3.65	11.74	9.88	9.23E+05	1.95E+05

AGS Running Figure of Merit (2)



Plan

- Use vertical scraping instead of horizontal scraping.
- Reduce AGS cold snake strength to 10% can reduce the horizontal component of polarization and reduce the polarization loss. Challenges: vertical tune window will be smaller and vertical tune has to be pushed higher. The gain is limited but worth a try.
- Set up the machine with horizontal tune close to 8 (at least at low energies). First with ν_y =9.1 and ν_x =8.3. Then lower ν_x to close to 8.05. We will set it up in a different AGS user. The challenges: quad P/S limit; coupling between horizontal and vertical; horizontal tune swing at higher energies.