

Analysis of $ep \rightarrow e'X$ from clas12 and CLAS(e1e) at 2 GeV

Ken Hicks (Ohio U.)

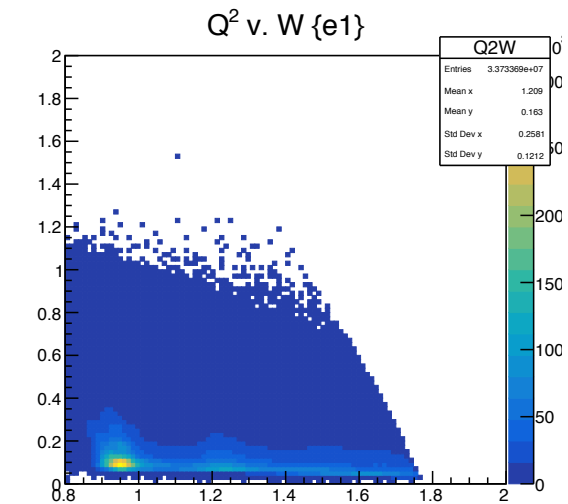
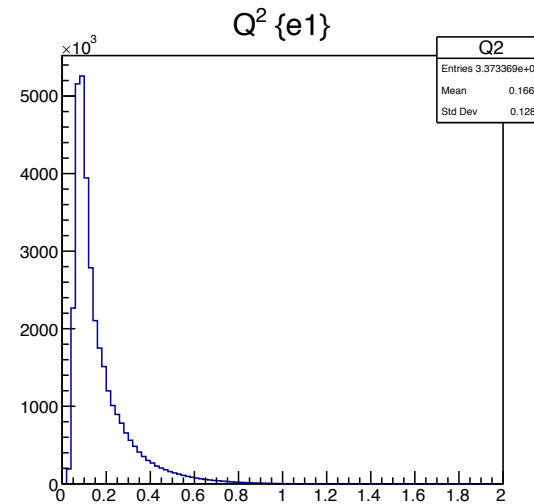
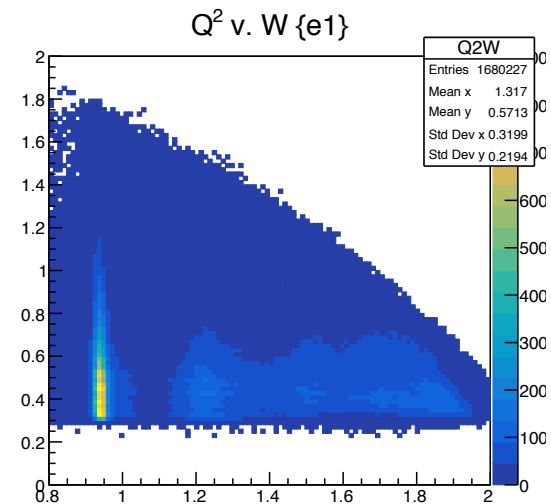
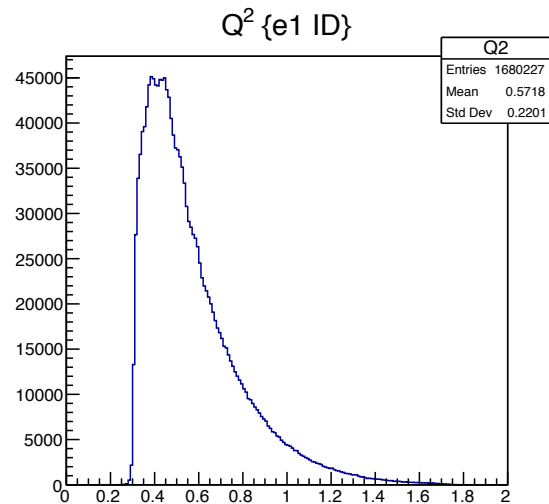
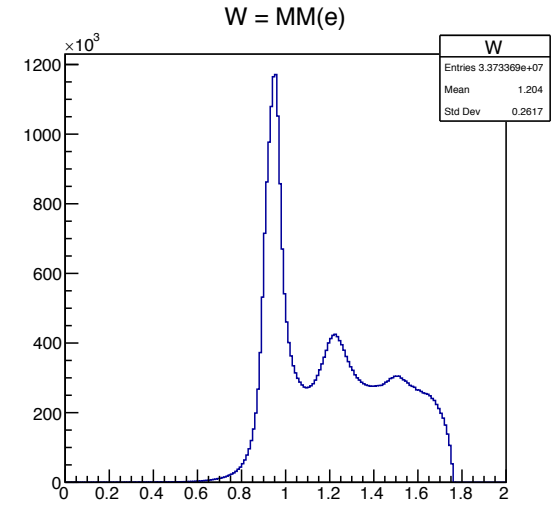
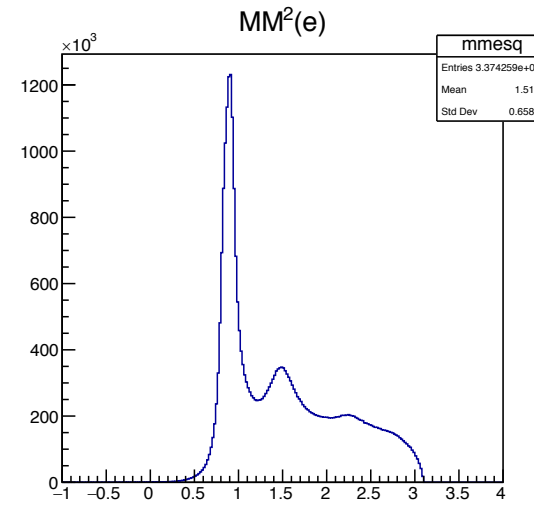
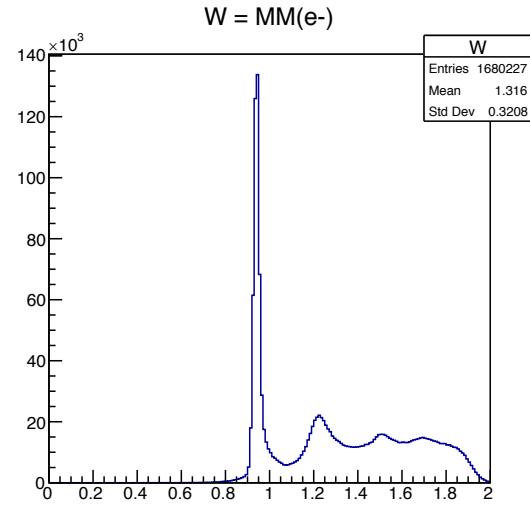
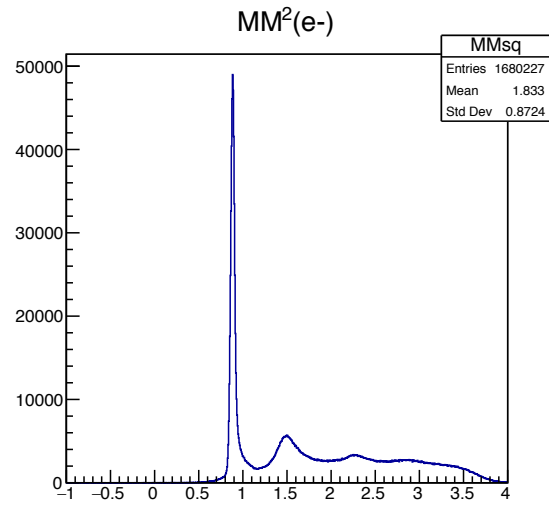
CLAS Collaboration Meeting

March 8, 2018

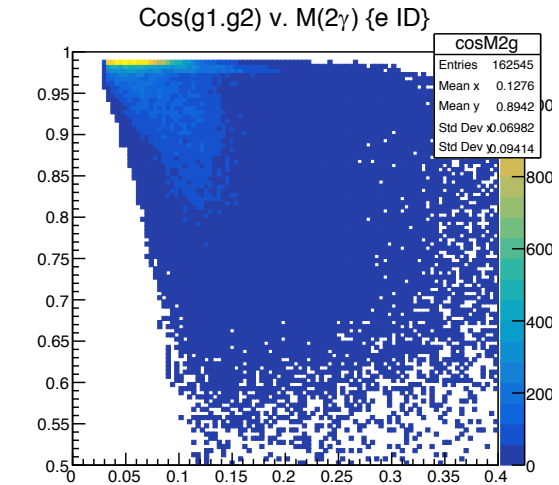
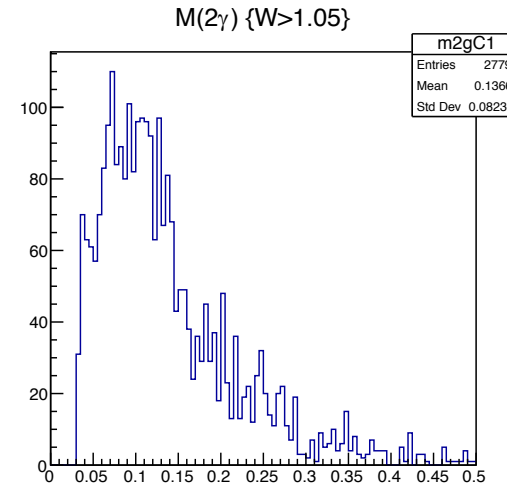
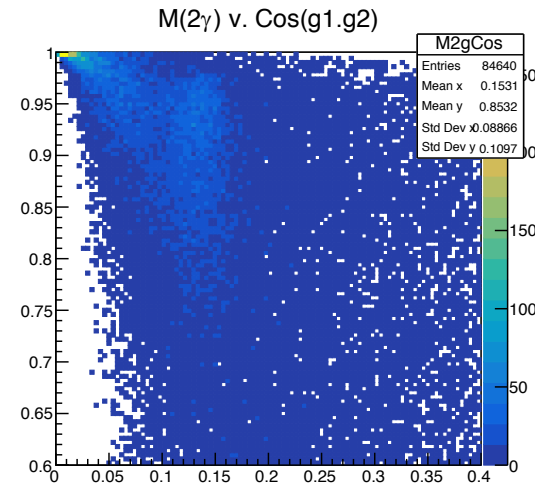
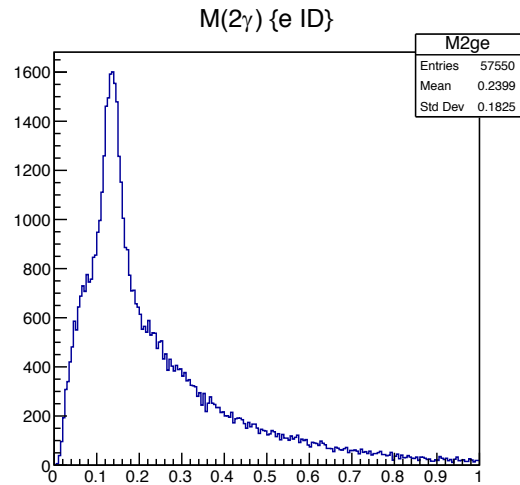
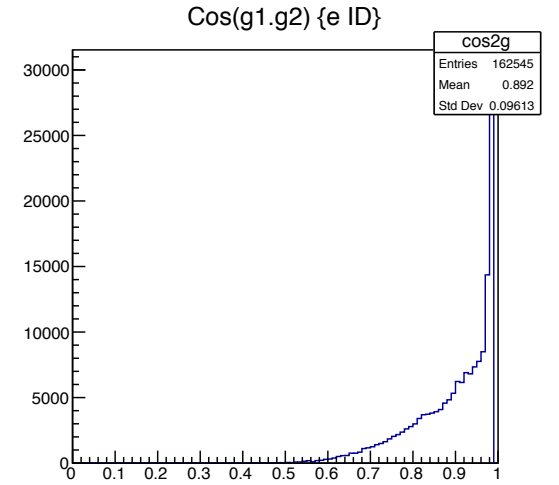
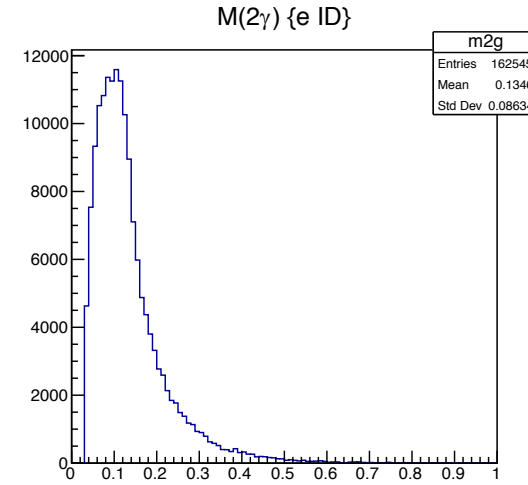
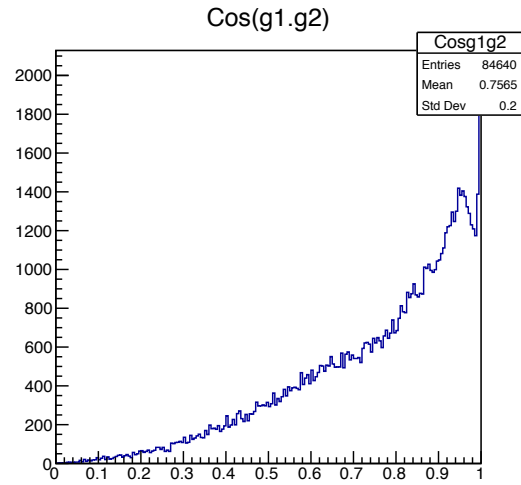
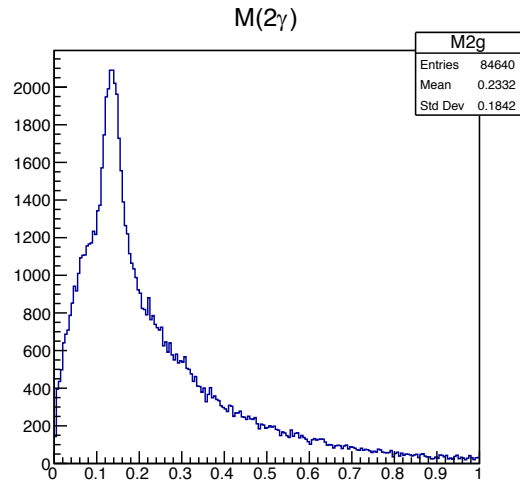
Comparison of e1e and clas12 runs:

Property	CLAS e1e (run 36117)	Clas12 (run 2475)
Beam energy	2.04 GeV	2.22 GeV
Magnet settings	In-bending (2250 A)	Out-bending (+0.6/+0.6)
target	LH2, 2 cm long	LH2,
Beam current/ livetime	5-10 nA / 97%	2.0 nA / 99%
Integraged charge (μC)	30.2 μC (gated)	7.77 μC (ungated)
Time of run	~1+ hours	~2.1 hours

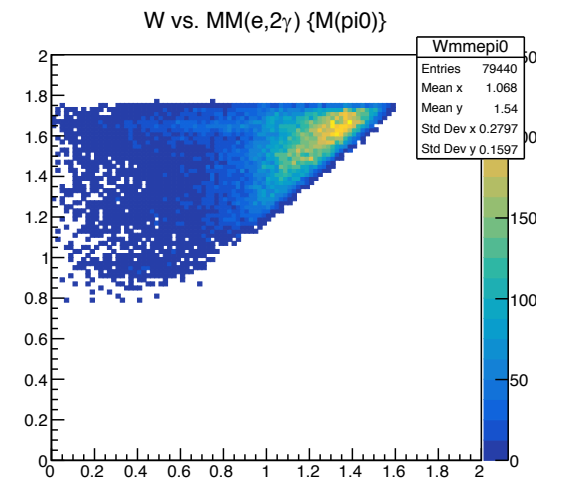
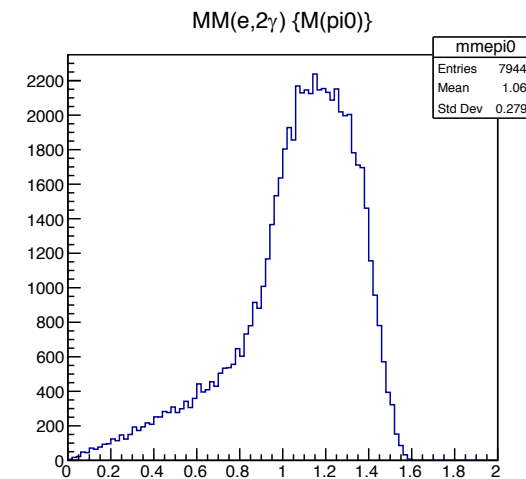
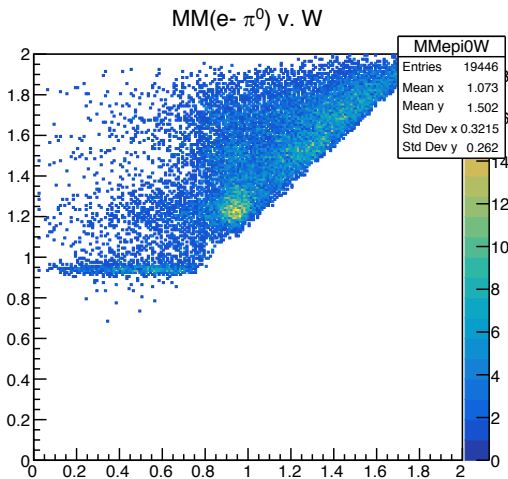
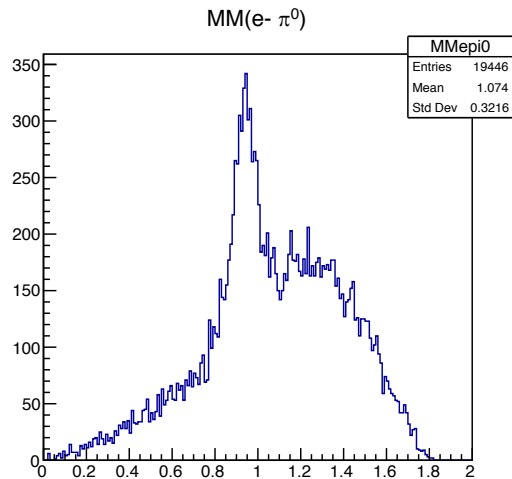
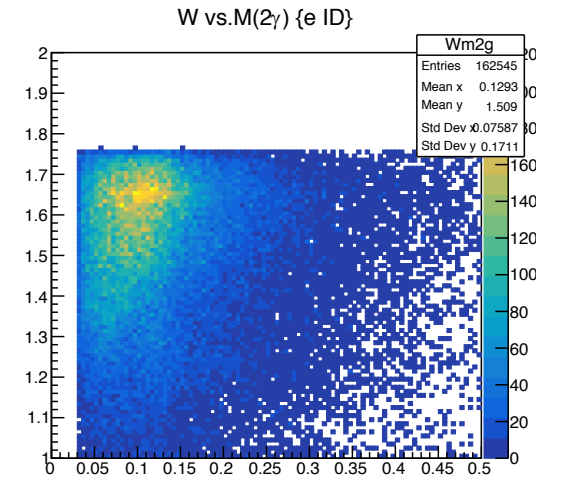
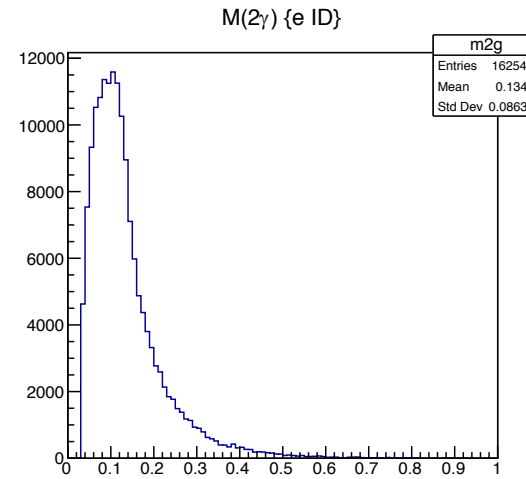
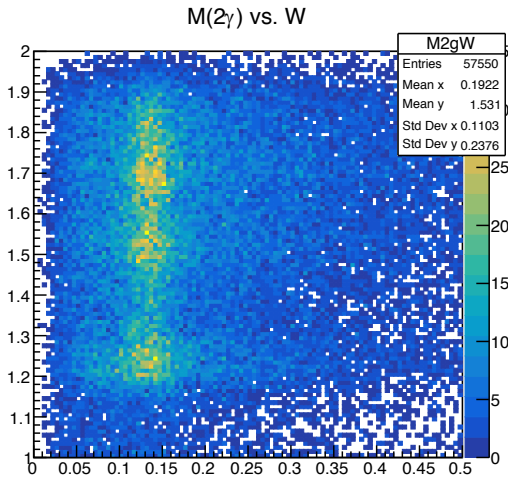
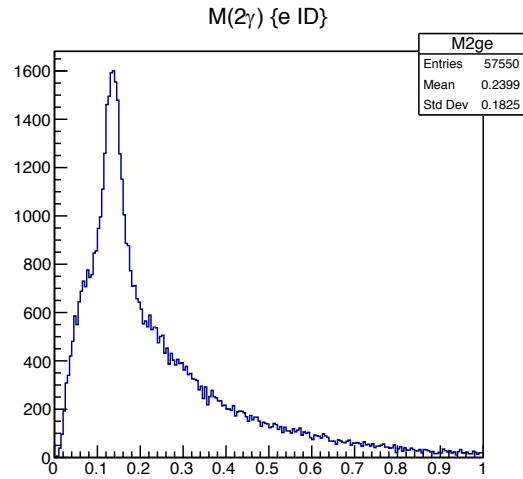
Electron-only comparison: e1e and clas12



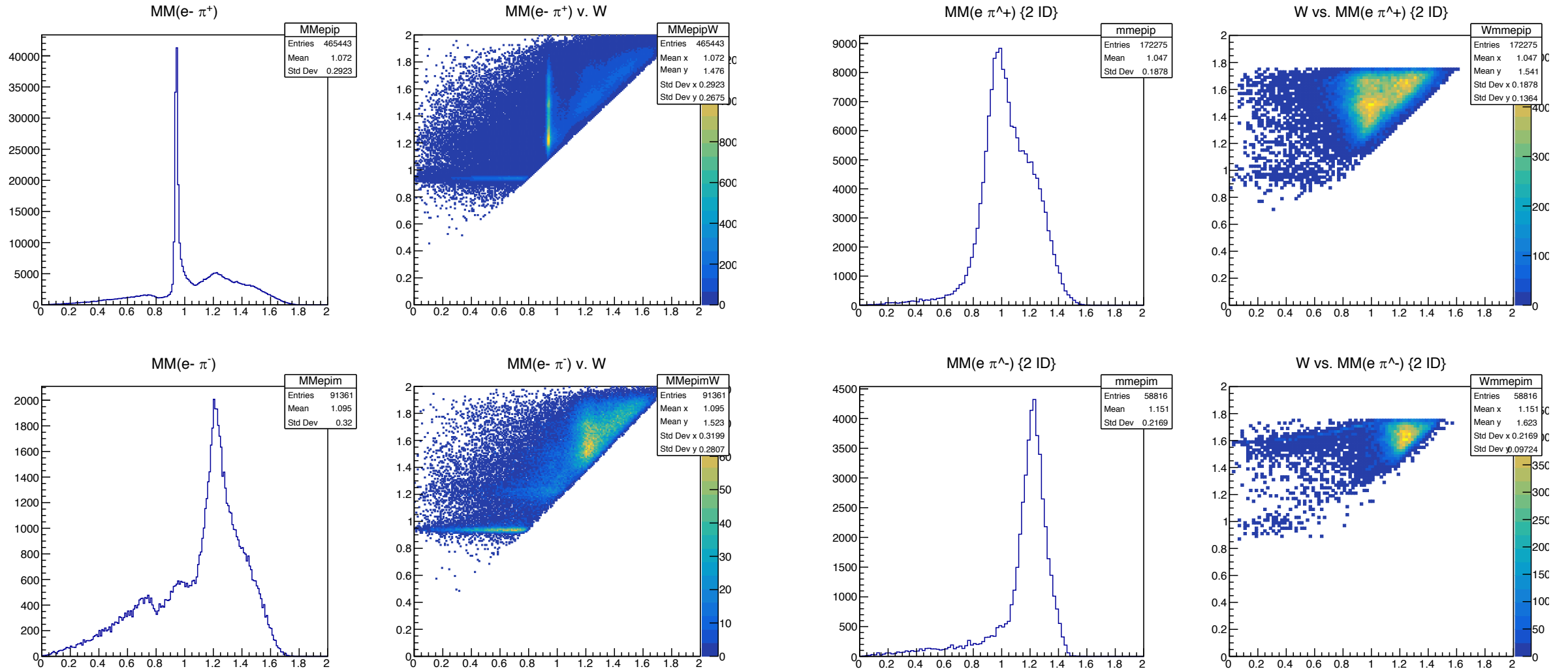
2-gamma ID (EC): e1e and clas12



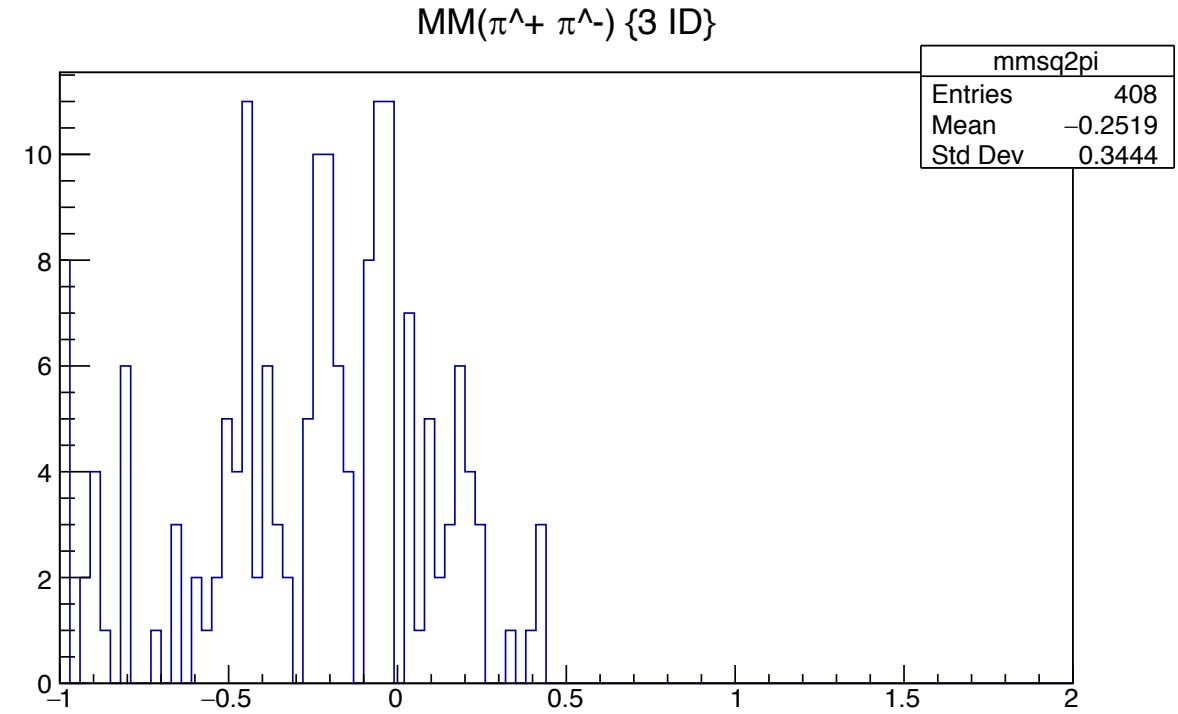
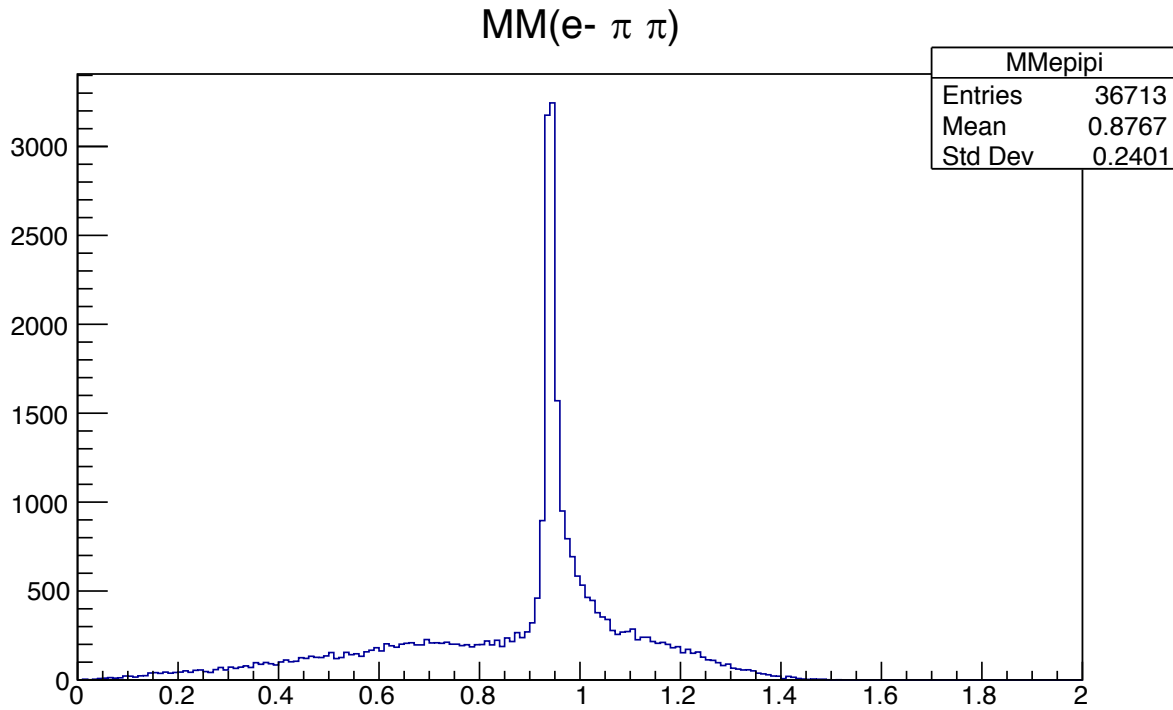
Electron + 2-gamma: e1e and clas12



Electron + pion: e1e and clas12

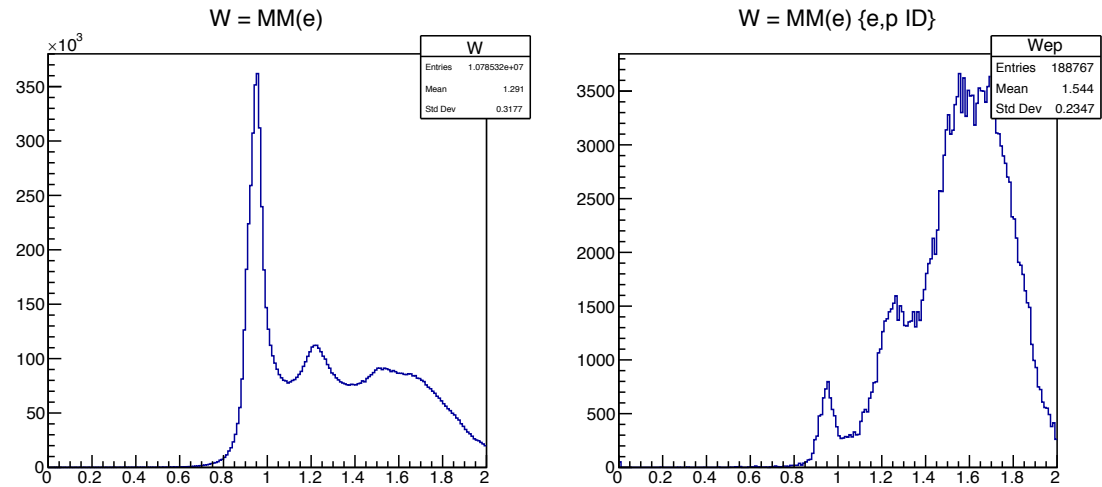


Electron, π^+ , π^- : e1e and clas12

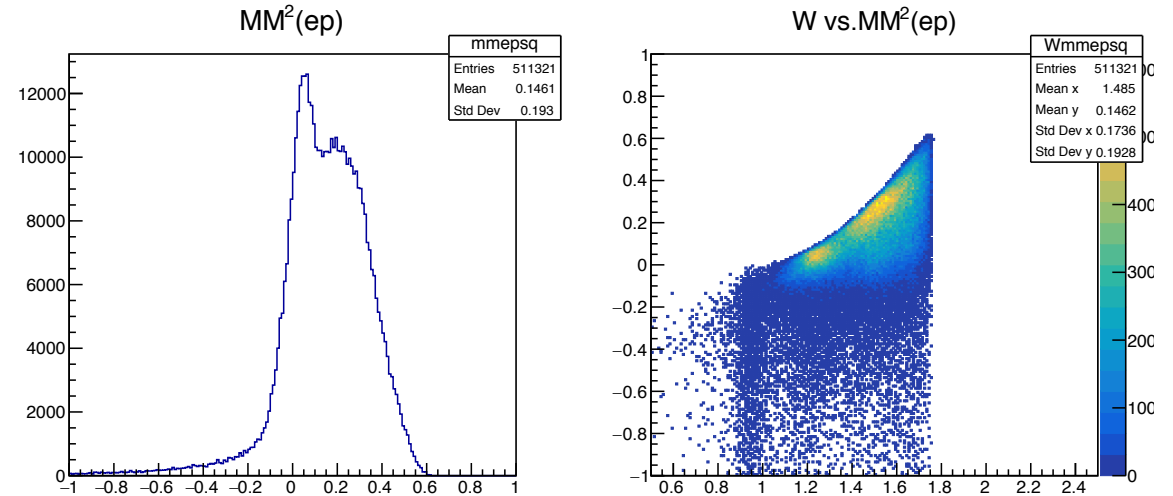
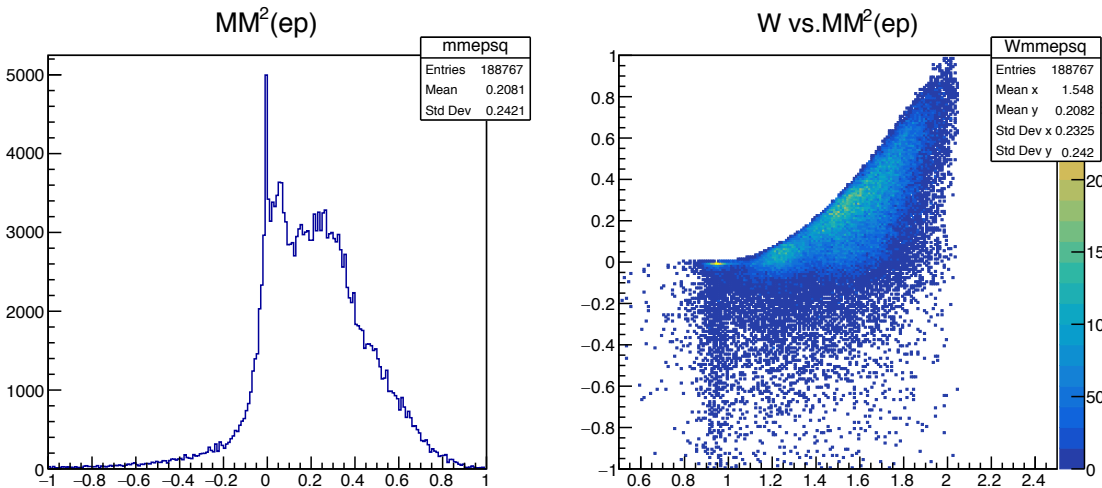
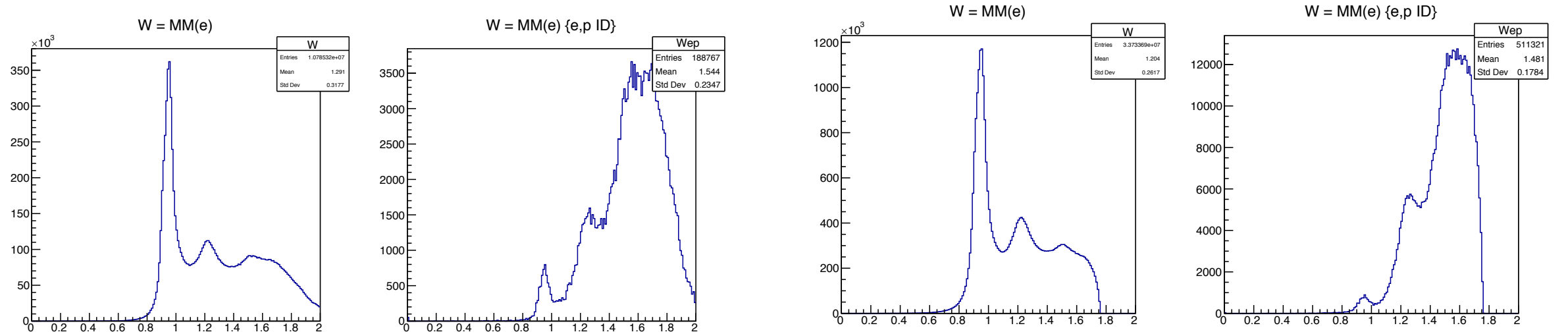


Electron+proton events: clas12 only

Cooking: 5a.0.11

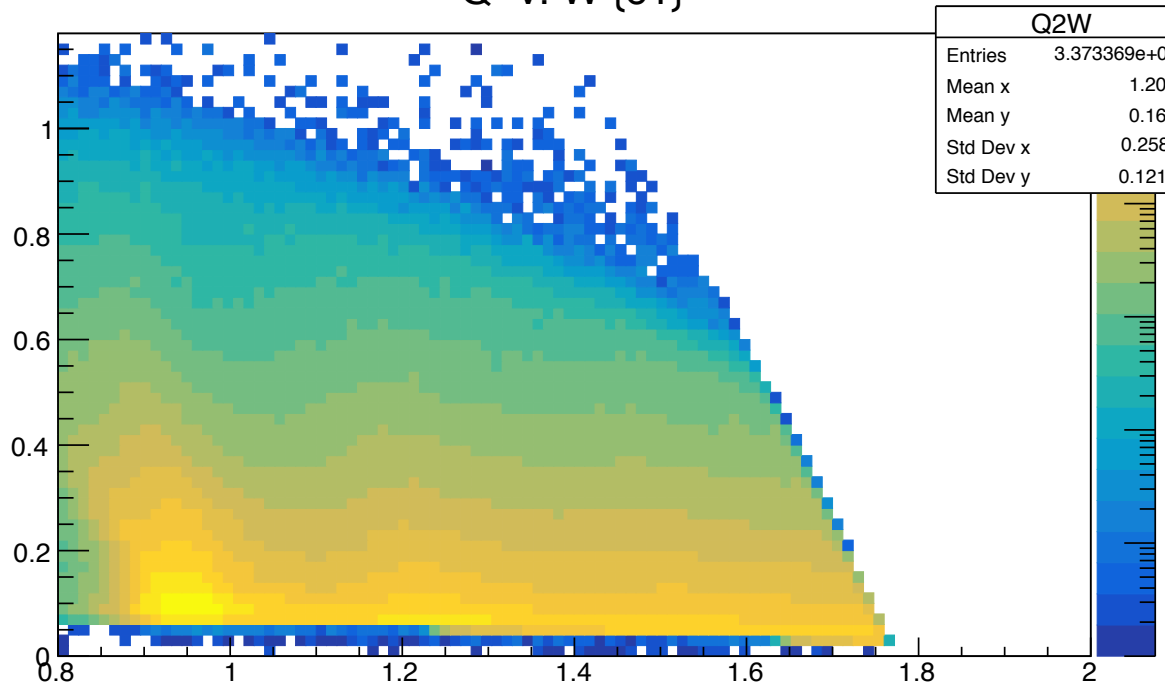


Cooking: 5a.1.0

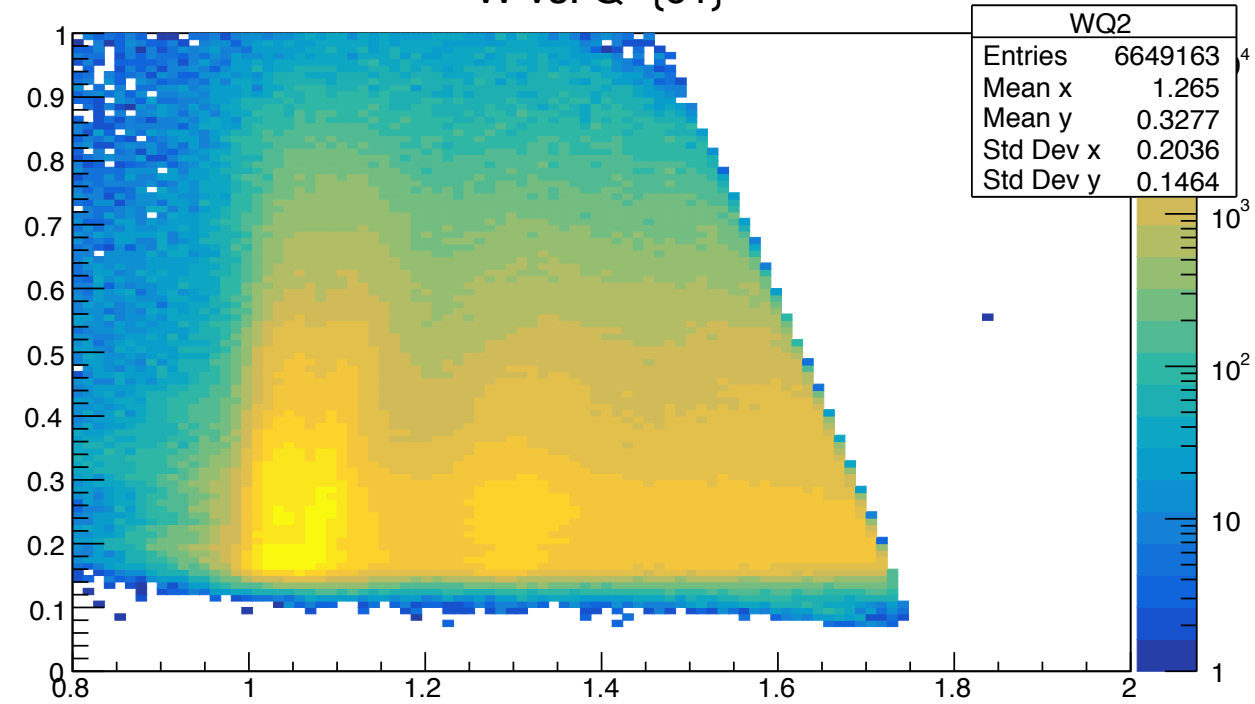


ep events: Q^2 dep. outbending | inbending

Q^2 v. W {e1}



W vs. Q^2 {e1}



Summary

- Still significant differences between e1e (6 GeV era) and clas12
 - Only 2.2 GeV data compared for now
 - Further work is needed after some improvements in the Event Builder
- Some important work that needs to be done:
 - Correct the torus magnetic field (known, of course)
 - Implement particle ID for the central detector (known, too)
 - Improve tracking efficiency (old news)
- Higher-level analysis can be difficult before the above work is done.
 - In summary: we know what we need to do for now.