

Systematic Uncertainties

M. Cummings

10/28/15

Sources of Error (for Asymmetry)

$$A = \left(\frac{1}{f P_b P_t} \right) \frac{Y_+ - Y_-}{Y_+ + Y_-}$$

2.2 GeV, 5T Longitudinal

Source	Total for Run or Bin by Bin	% Uncertainty
Target Polarization	Total	0.16%
Beam Polarization	Total	1.7%
Charge Asymmetry	Total	0.0096%
Lifetime Asymmetry	Total	0.00093%
Dilution Factor*	Bin by Bin	5%
Pion Contamination	Total	0.0033%
Radiative Corrections*	Total	5%

← ?*

Total = 7.27%

* 5% uncertainty assigned as placeholder

* Calibration Constant Uncertainties: Mat 17 = 1.22% , Mat 18 = 0.95%

Sources of Error (for Asymmetry)

$$A = \left(\frac{1}{f P_b P_t} \right) \frac{Y_+ - Y_-}{Y_+ + Y_-}$$

2.2 GeV, 5T Transverse

Source	Total for Run or Bin by Bin	% Uncertainty
Target Polarization	Total	0.82%
Beam Polarization	Total	1.7%
Charge Asymmetry	Total	0.012%
Lifetime Asymmetry	Total	0.0050%
Dilution Factor*	Bin by Bin	5%
Pion Contamination	Total	0.027%
Radiative Corrections*	Total	5%

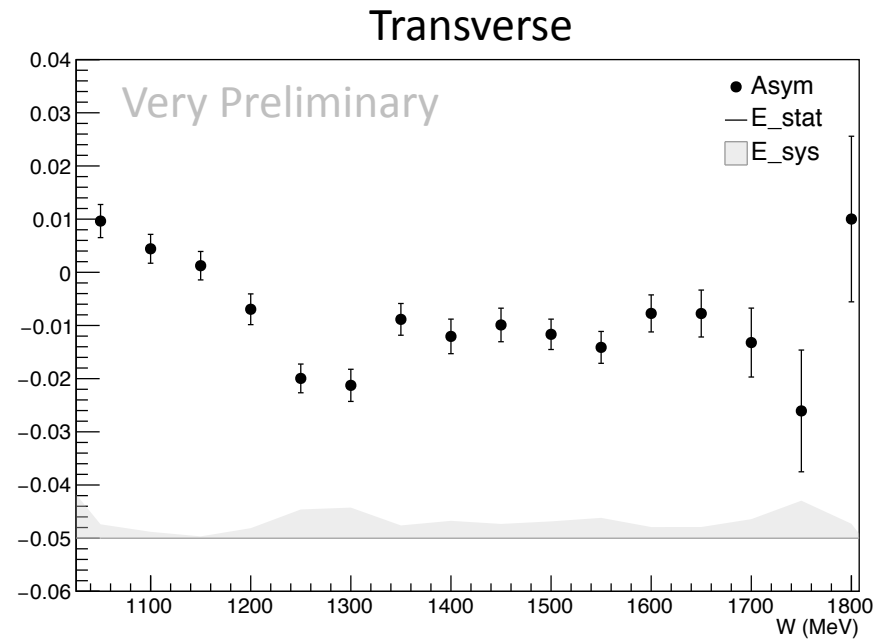
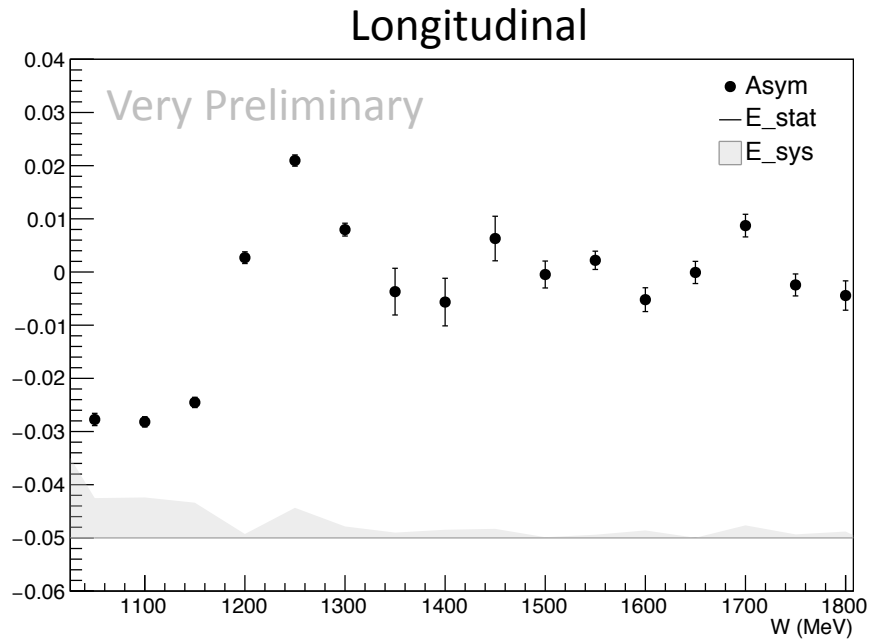
← ?*

Total = 7.32%

* 5% uncertainty assigned as placeholder

* Calibration Constant Uncertainties: Mat 19 = 8.13% , Mat 20 = 4.47%

2.2 GeV, 5T Asymmetries



- $f = 0.15$ (constant)
- No radiative corrections
- Only LHRS runs