

E (GeV)	$\theta$ ( $^\circ$ )	Target Field(T)	Target angle( $^\circ$ )	Beam incl( $^\circ$ )	PAC days	Cal days	Overhead days	Total days	
2.254	5.7	2.5	90	0.0	10.5	21.0	11.7	32.7	
			7	2.1	1.5	3.0	0.5	3.5	36.2
1.706	5.7	2.5	90	4.0	2.4	4.8	2.7	7.5	
			7	1.4	1.0	2.0	0.3	2.3	9.8
3.350	5.7	5.0	90	0.0	1.2	2.4	1.4	3.8	
			0	0.0	1.2	2.4	1.4	3.8	
			7	0.0	2.0	4.0	0.6	4.6	12.2
2.254	5.7	5.0	90	0.0	2.2	4.4	2.5	6.9	
			7	0.0	1.5	3.0	0.5	3.5	10.4
1.158	5.7	2.5	90	5.9	1.4	2.8	1.6	4.4	
			7	2.0	0.7	1.3	0.2	1.5	5.9
G2P					19.0	37.9	21.2	59.1	
GEP					6.7	13.3	2.0	15.3	
SUM					25.6	51.3	23.2	74.4	

Table 1: Estimated runtime. ‘Cal days’ assumes 50% accelerator efficiency. The overhead is distributed evenly. Commissioning days at 2.2 GeV are not included in this table. Nominal  $P_b=0.80$ , 2<sup>nd</sup> pass  $P^2=.884$ , 3<sup>rd</sup> pass  $P^2=.902$ . 2.2 GeV, 5T and 3.3 GeV 5T :local dump. All others go to hall A dump. Generated February 9, 2012.

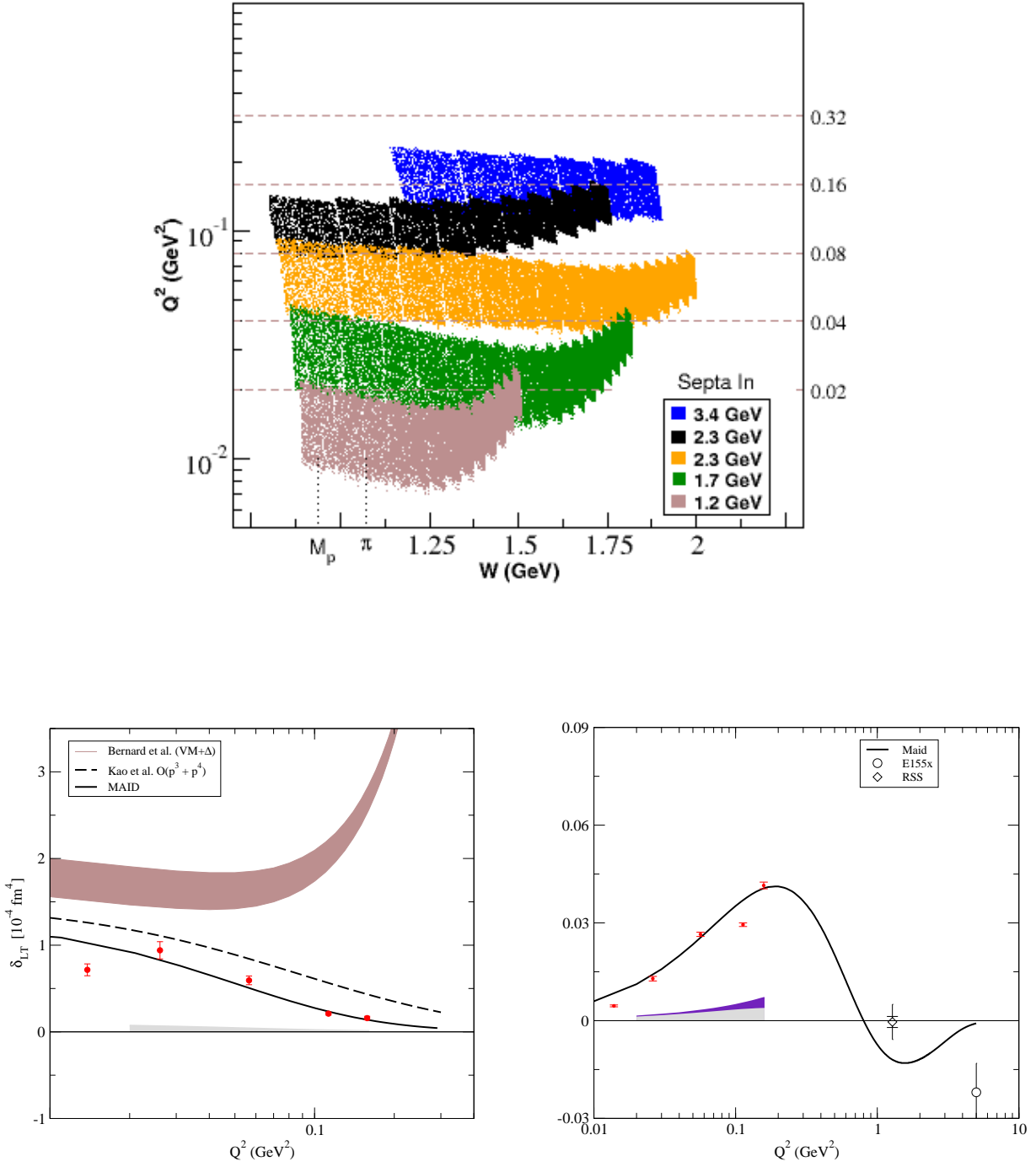


Figure 1: Statistical Projections for the LT spin polarizability and BC Integral (at const E, not const  $Q^2$ ).

Table 2: Beam Time Request.

$E_0$	$\Theta$	$P_0$	W	$Q^2$	Rate P (Hz)	Rate (kHz)	Pre	$\mathcal{L}$	$P_b P_t$	I (nA)	Time (h)
1.2	6.0	0.974	1.10	0.013	86	6.0	24	0.8E+35	0.23	85	5.8
1.2	6.2	0.896	1.17	0.012	93	6.0	16	0.8E+35	0.23	85	5.4
1.2	6.3	0.825	1.22	0.012	112	6.0	12	0.8E+35	0.23	85	4.1
1.2	6.6	0.759	1.27	0.012	127	6.0	9	0.8E+35	0.23	85	3.4
1.2	6.9	0.698	1.32	0.012	139	6.0	6	0.8E+35	0.23	85	3.1
1.2	7.4	0.642	1.36	0.012	155	6.0	4	0.8E+35	0.23	85	2.7
1.2	7.9	0.591	1.39	0.013	175	6.0	3	0.8E+35	0.23	85	2.3
1.2	8.6	0.543	1.42	0.014	198	6.0	2	0.8E+35	0.23	85	2.0
1.2	9.4	0.500	1.45	0.016	223	6.0	1	0.8E+35	0.23	85	1.7
1.2	10.4	0.460	1.47	0.017	252	6.0	1	0.8E+35	0.23	85	1.5
1.2	11.5	0.423	1.50	0.020	207	4.4	1	0.8E+35	0.23	85	1.7
<b>1.4</b> PAC days											
1.7	5.9	1.556	1.07	0.028	77	6.0	13	0.8E+35	0.22	85	5.3
1.7	5.9	1.431	1.17	0.026	81	6.0	9	0.8E+35	0.22	85	5.1
1.7	6.0	1.317	1.26	0.024	100	6.0	7	0.8E+35	0.22	85	4.1
1.7	6.1	1.211	1.34	0.023	105	6.0	5	0.8E+35	0.22	85	3.9
1.7	6.2	1.115	1.40	0.022	115	6.0	4	0.8E+35	0.22	85	3.5
1.7	6.4	1.025	1.46	0.022	132	6.0	3	0.8E+35	0.22	85	3.1
1.7	6.6	0.943	1.51	0.021	148	6.0	3	0.8E+35	0.22	85	2.7
1.7	6.9	0.868	1.56	0.021	160	6.0	2	0.8E+35	0.22	85	2.5
1.7	7.3	0.798	1.60	0.022	169	6.0	2	0.8E+35	0.22	85	2.4
1.7	7.7	0.735	1.64	0.023	180	6.0	1	0.8E+35	0.22	85	2.3
1.7	8.2	0.676	1.67	0.024	194	6.0	1	0.8E+35	0.22	85	2.1
1.7	8.9	0.622	1.70	0.025	202	5.8	1	0.8E+35	0.22	85	2.0
1.7	9.5	0.572	1.73	0.027	172	4.6	1	0.8E+35	0.22	85	2.4
1.7	10.3	0.526	1.75	0.029	133	3.3	1	0.8E+35	0.22	85	3.1
1.7	11.1	0.484	1.77	0.031	110	2.5	1	0.8E+35	0.22	85	3.7
1.7	12.0	0.445	1.79	0.033	90	1.9	1	0.8E+35	0.22	85	4.5
1.7	13.0	0.410	1.81	0.036	78	1.5	1	0.8E+35	0.22	85	5.2
<b>2.4</b> PAC days											
2.3	6.6	2.050	1.10	0.061	73	6.0	4	0.8E+35	0.22	85	14.7
2.3	6.7	1.886	1.23	0.059	89	6.0	3	0.8E+35	0.22	85	12.1
2.3	6.9	1.735	1.34	0.057	93	6.0	2	0.8E+35	0.22	85	11.5
2.3	7.1	1.596	1.44	0.055	106	6.0	1	0.8E+35	0.22	85	10.1
2.3	7.3	1.468	1.52	0.054	126	6.0	1	0.8E+35	0.22	85	8.5
2.3	7.6	1.351	1.59	0.053	131	6.0	1	0.8E+35	0.22	85	8.1
2.3	7.8	1.243	1.65	0.052	114	4.9	1	0.8E+35	0.22	85	9.4
2.3	8.1	1.143	1.71	0.052	101	4.0	1	0.8E+35	0.22	85	10.6
2.3	8.5	1.052	1.76	0.052	87	3.3	1	0.8E+35	0.22	85	12.2
2.3	8.9	0.968	1.80	0.053	76	2.7	1	0.8E+35	0.22	85	14.0
2.3	9.4	0.890	1.84	0.054	66	2.2	1	0.8E+35	0.22	85	16.1
2.3	9.9	0.819	1.88	0.055	58	1.8	1	0.8E+35	0.22	85	18.4
2.3	10.5	0.754	1.91	0.057	49	1.5	1	0.8E+35	0.22	85	21.7
2.3	11.2	0.693	1.94	0.059	44	1.2	1	0.8E+35	0.22	85	24.3

*continued on next page*

Table 2: Beam Time Request.

$E_0$	$\Theta$	$P_0$	W	$Q^2$	Rate P (Hz)	Rate (kHz)	Pre	$\mathcal{L}$	$P_b P_t$	I (nA)	Time (h)
2.3	11.9	0.638	1.96	0.062	38	1.0	1	0.8E+35	0.22	85	28.1
2.3	12.7	0.587	1.99	0.064	33	0.8	1	0.8E+35	0.22	85	32.0
<b>10.5</b> PAC days											
2.3	8.6	2.050	1.08	0.104	70	6.0	1	0.8E+35	0.56	85	2.6
2.3	9.0	1.886	1.21	0.104	89	6.0	1	0.8E+35	0.56	85	2.0
2.3	9.4	1.735	1.32	0.105	68	4.4	1	0.8E+35	0.56	85	2.7
2.3	9.9	1.596	1.42	0.107	46	2.7	1	0.8E+35	0.56	85	4.0
2.3	10.5	1.468	1.50	0.110	41	2.0	1	0.8E+35	0.56	85	4.4
2.3	11.1	1.351	1.57	0.115	29	1.3	1	0.8E+35	0.56	85	6.2
2.3	11.9	1.243	1.63	0.120	22	0.9	1	0.8E+35	0.56	85	8.2
2.3	12.7	1.143	1.68	0.126	18	0.7	1	0.8E+35	0.56	85	10.2
2.3	13.6	1.052	1.73	0.133	14	0.5	1	0.8E+35	0.56	85	12.9
<b>2.2</b> PAC days											
3.4 <sup>†</sup>	7.5	2.889	1.26	0.167	60	6.0	1	0.8E+35	0.57	85	4.2
3.4 <sup>†</sup>	7.7	2.658	1.42	0.162	50	4.9	1	0.8E+35	0.57	85	5.1
3.4 <sup>†</sup>	8.0	2.445	1.56	0.158	45	3.6	1	0.8E+35	0.57	85	5.6
3.4 <sup>†</sup>	8.2	2.249	1.67	0.155	33	2.6	1	0.8E+35	0.57	85	7.6
3.4 <sup>†</sup>	8.5	2.070	1.77	0.154	26	1.9	1	0.8E+35	0.57	85	9.5
3.4 <sup>†</sup>	8.9	1.904	1.85	0.154	21	1.4	1	0.8E+35	0.57	85	12.0
3.4 <sup>†</sup>	9.3	1.752	1.93	0.155	17	1.1	1	0.8E+35	0.57	85	14.5
<b>2.4</b> PAC days											
<sup>†</sup> signifies that only the left spectrometer can access this momentum. <sup>‡</sup> signifies that longitudinal data will be taken in addition to transverse.											

Parameter	Value
$\Delta\Omega$ [msr]	2.9
$\pm\delta P$ [%]	4.0
$T_b$	0.032
$T_a$	0.032
Minimum time per setting [hr]	1.0
Minimum Momentum [MeV]	400.0
Maximum Momentum (L) [MeV]	3140.0
Maximum Momentum (R) [MeV]	3140.0
Daq Limit [kHz]	6.0
Packing Fraction	0.55

Table 5: Experiment Parameters

Table 3: Overhead

Overhead	Number	Time Per (hr)	(hr)
Target anneal	46	2.5	115.0
Target rotation	4	8.0	32.0
–Beamline survey	5	8.0	40.0
Target swap	6	8.0	48.0
Target T.E.	12	4.0	48.0
Target field ramp	5	4.0	20.0
Packing Fraction	65	0.50	32.5
Pass change	4	4.0	16.0
Linac change	2	8.0	16.0
Momentum change	65	0.50	32.5
Moller measurement	5	2.0	10.0
Optics/elastic calibration	5	16.0	80.0
Arc Energy Meas.	5	2.0	10.0
BCM calibration	4	4.0	20.0

444.0

Table 4: Statistical Uncertainty

Kinematic	$A_{\parallel}$ error	$A_{\perp}$ error
1	0.004*	0.007
2	0.004*	0.007
3	0.004*	0.004
4	0.004*	0.004
5	0.004	0.005

\* EG4 expected uncertainty.

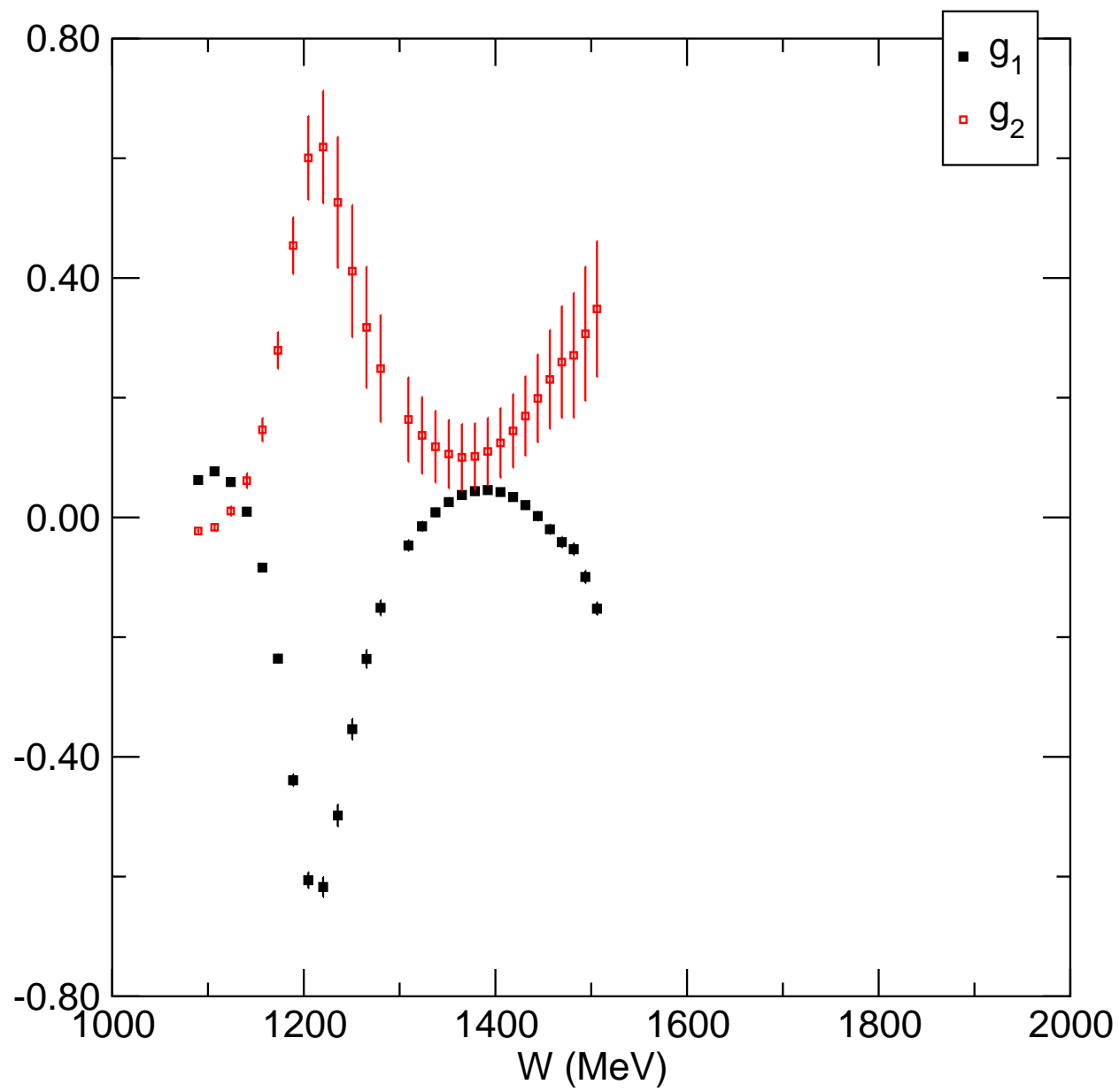


Figure 2: 1.1 GeV (2.5T) structure functions.

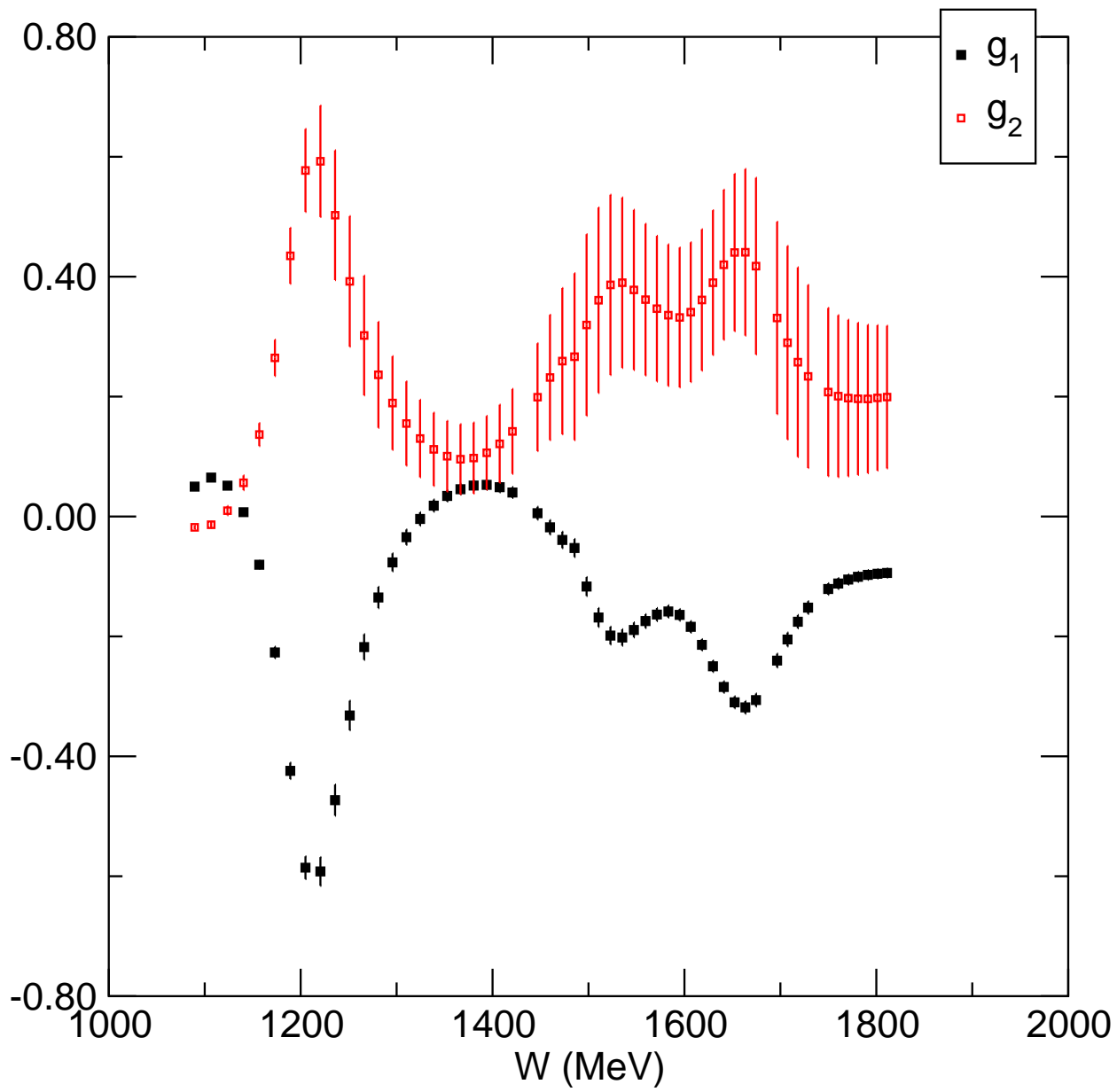


Figure 3: 1.7 GeV (2.5T) structure functions.

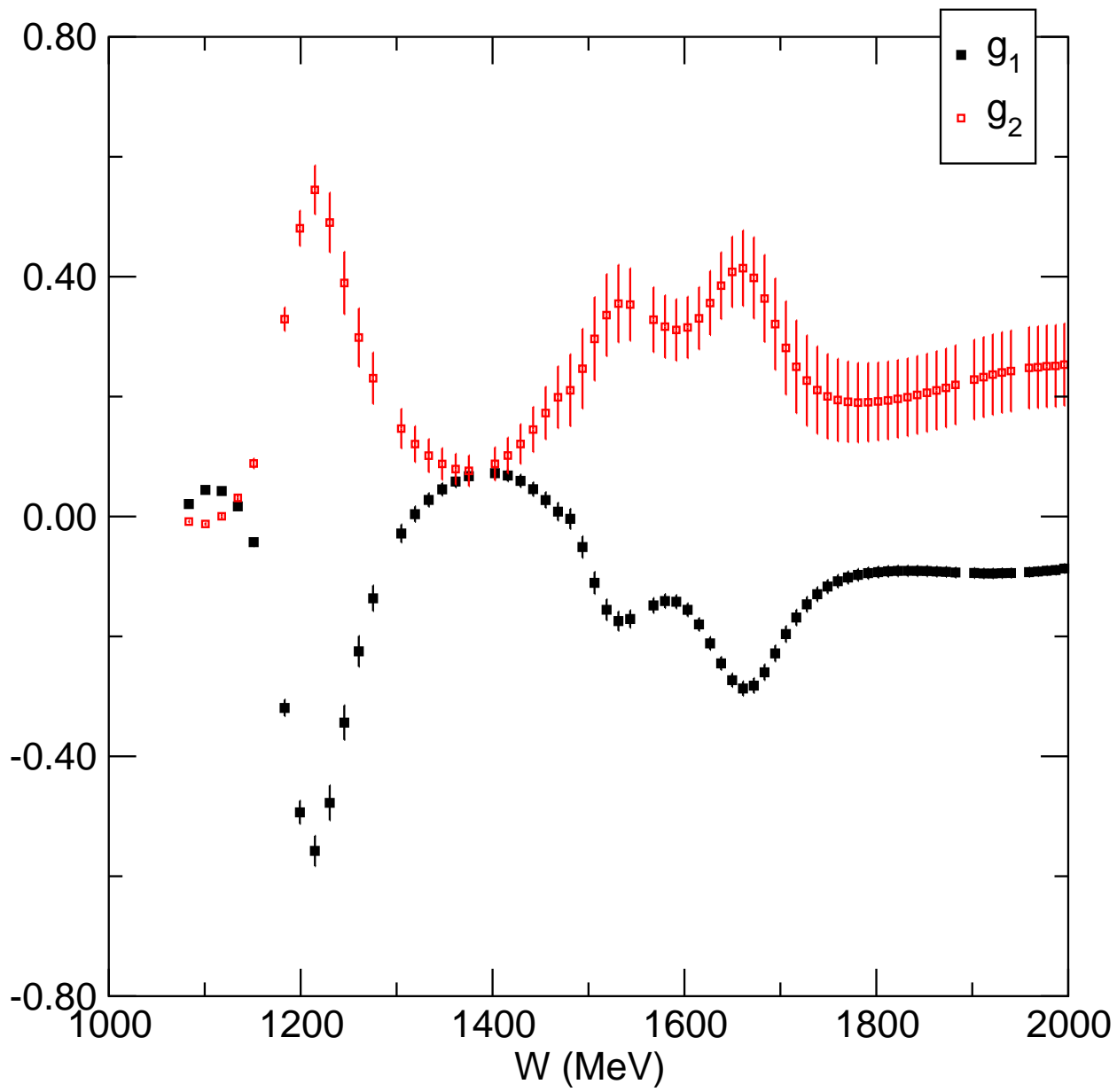


Figure 4: 2.2 GeV (2.5T) structure functions.



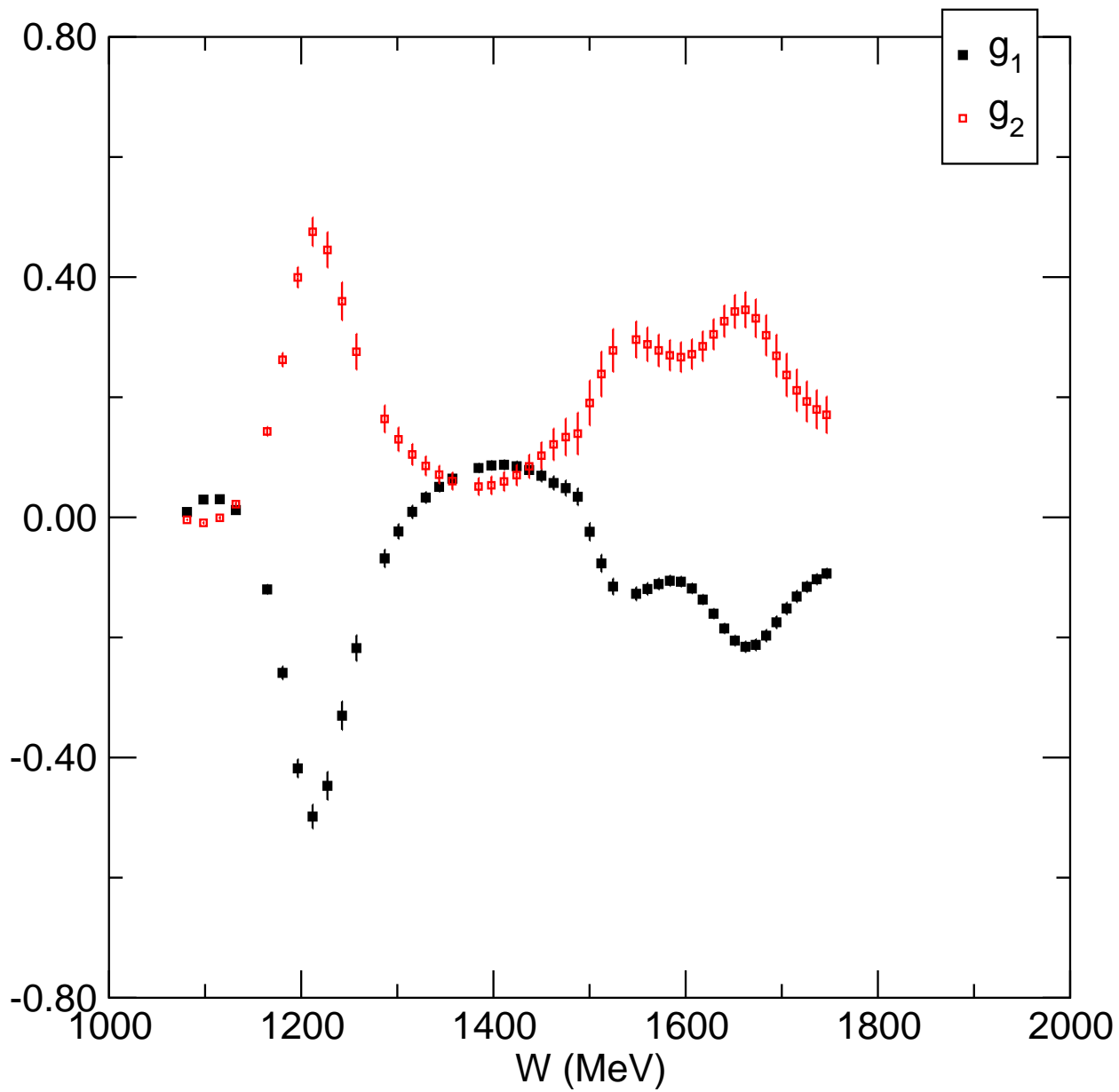


Figure 5: 2.2 GeV (5.0T) structure functions.

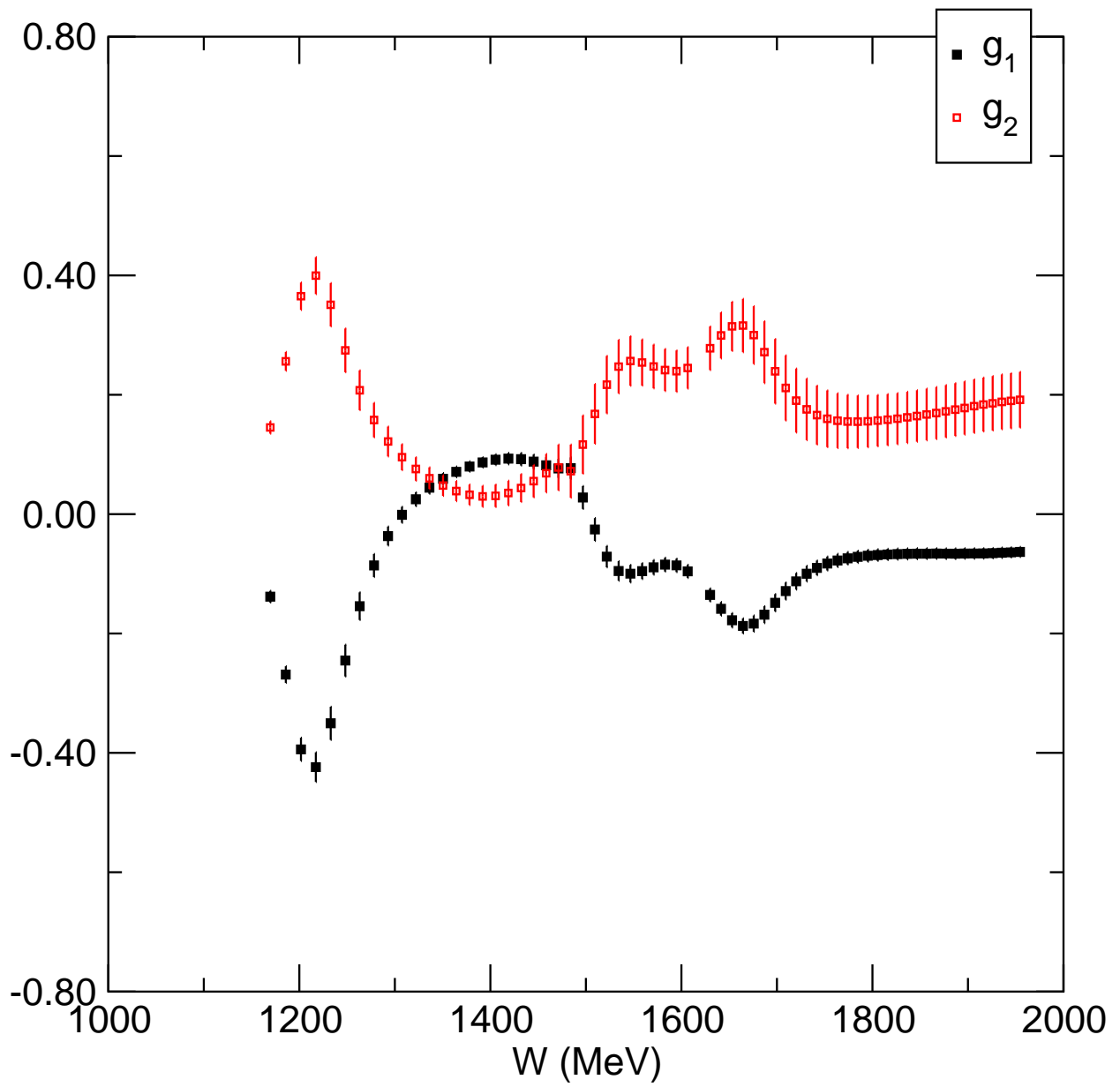


Figure 6: 3.3 GeV (5.0T) structure functions.

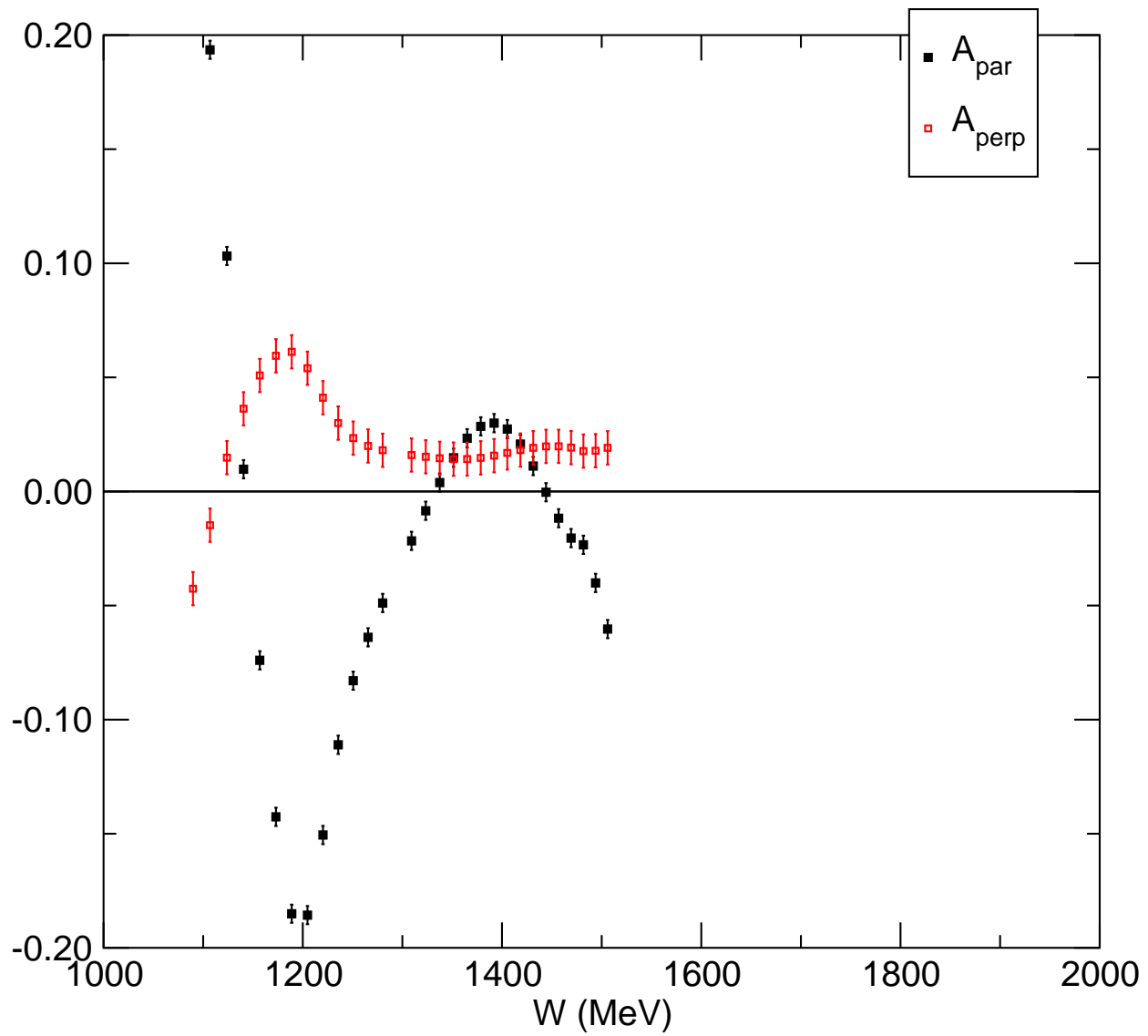


Figure 7: 1.1 GeV (2.5T) Asymmetries.

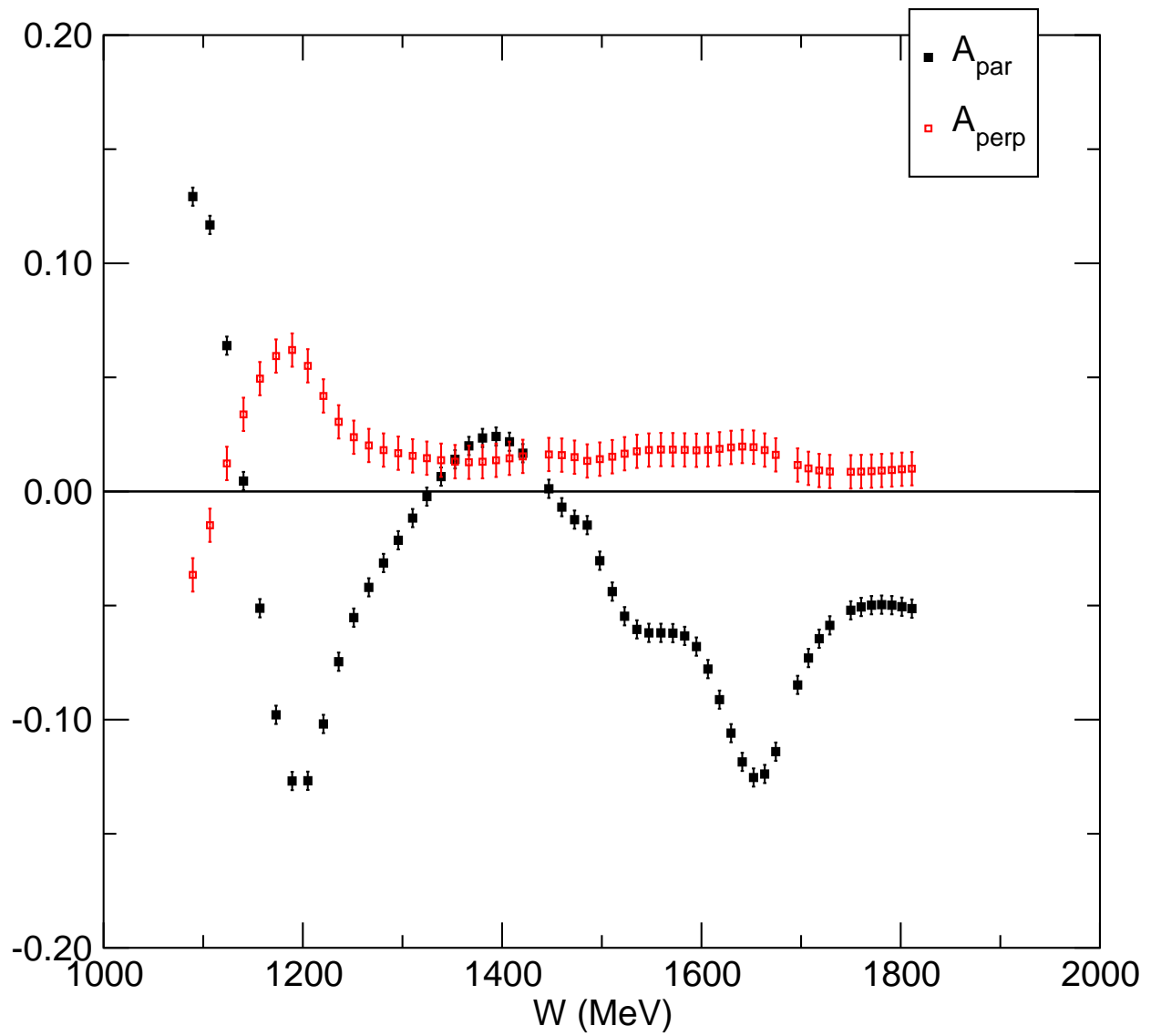


Figure 8: 1.7 GeV (2.5T) Asymmetries.

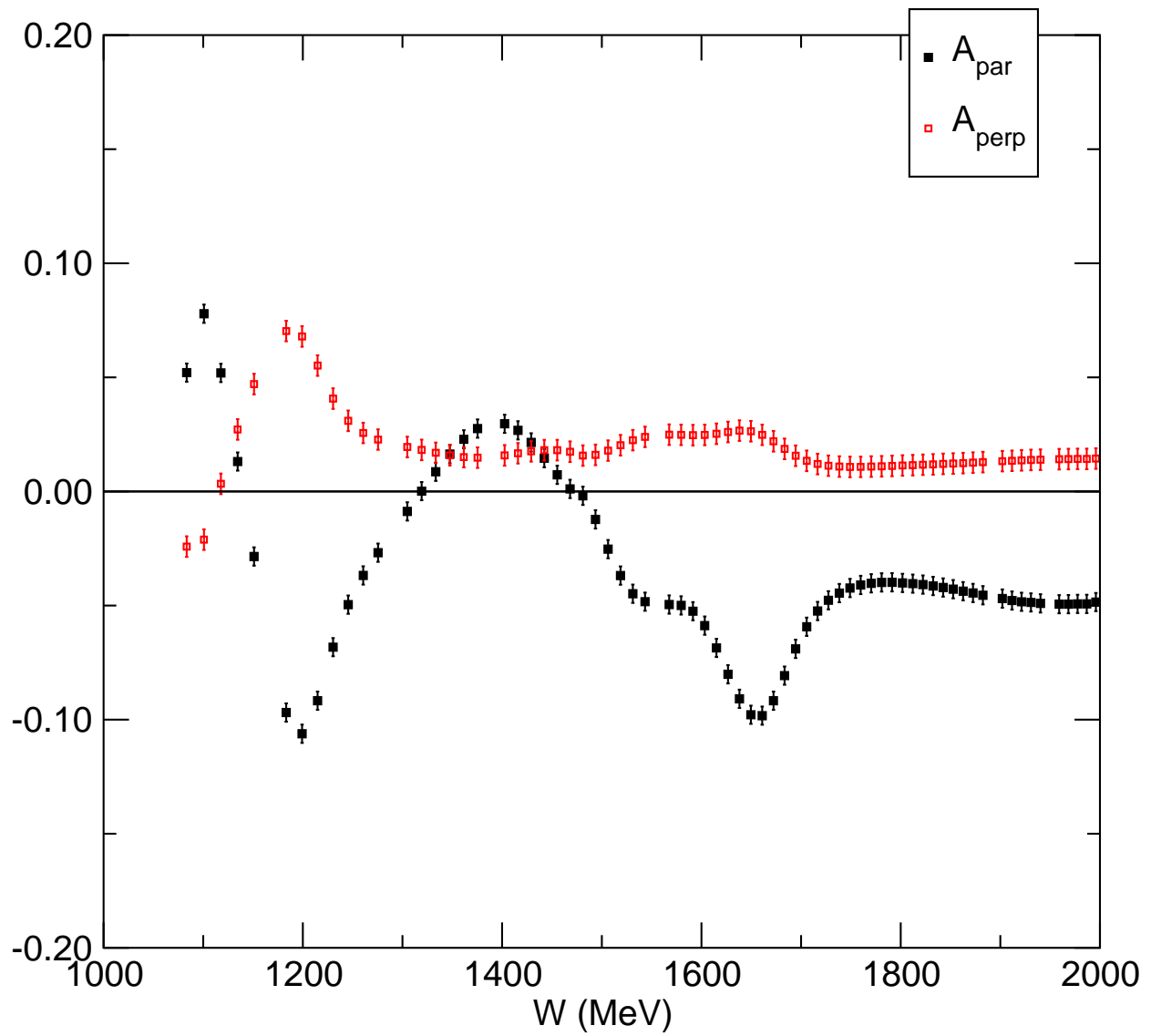


Figure 9: 2.2 GeV (2.5T) Asymmetries.

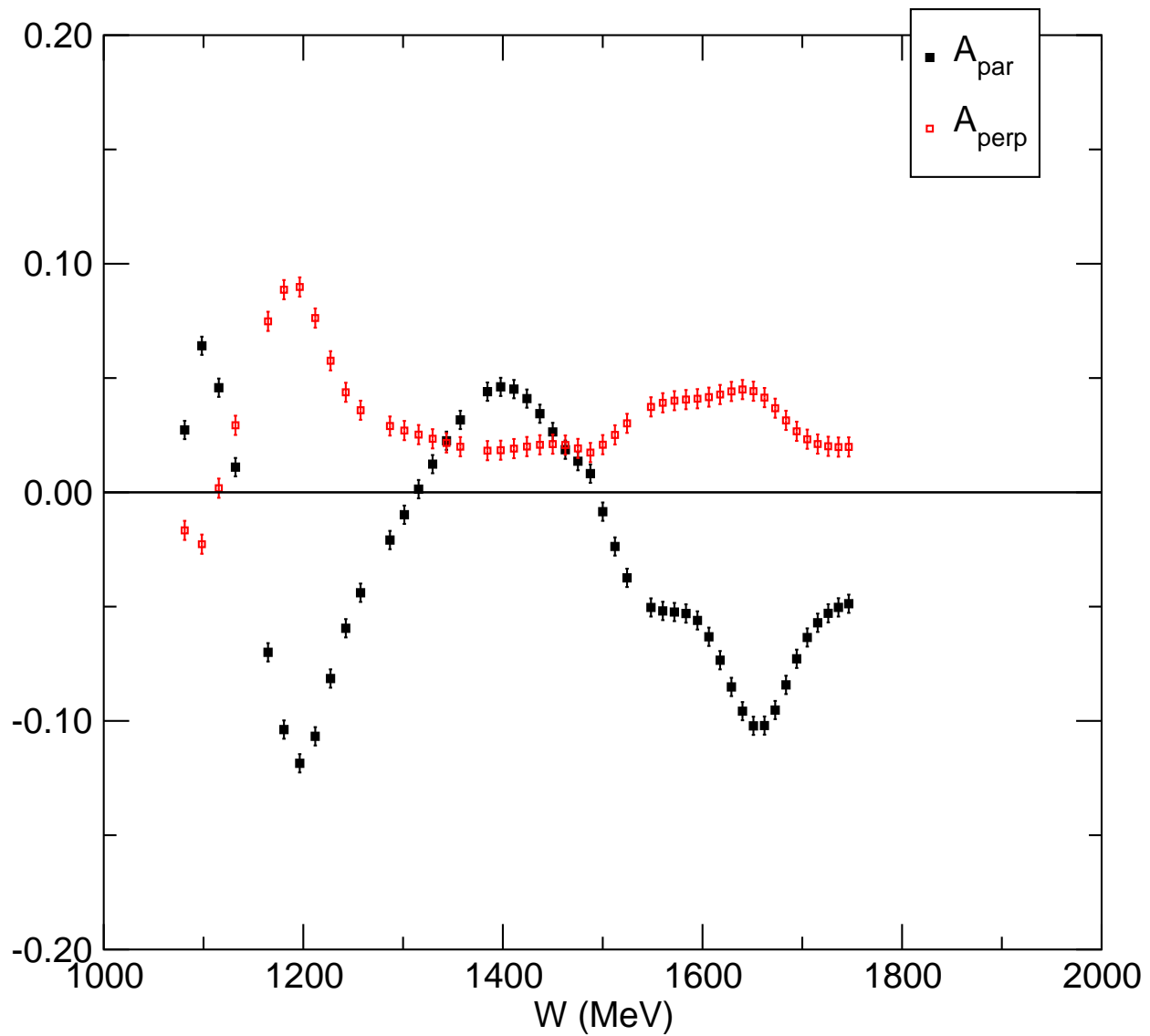


Figure 10: 2.2 GeV (5.0T) Asymmetries.

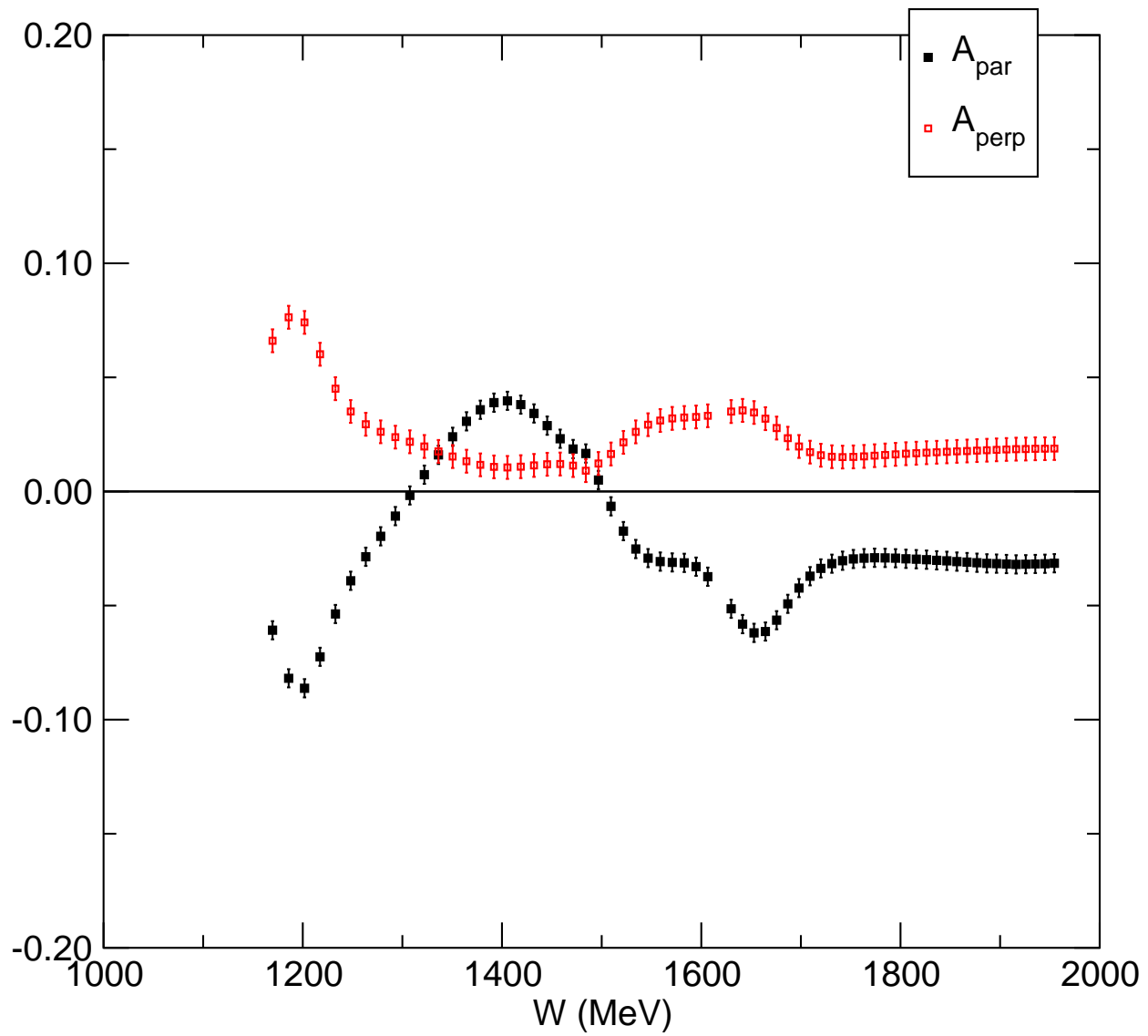


Figure 11: 3.3 GeV (5.0T) Asymmetries.

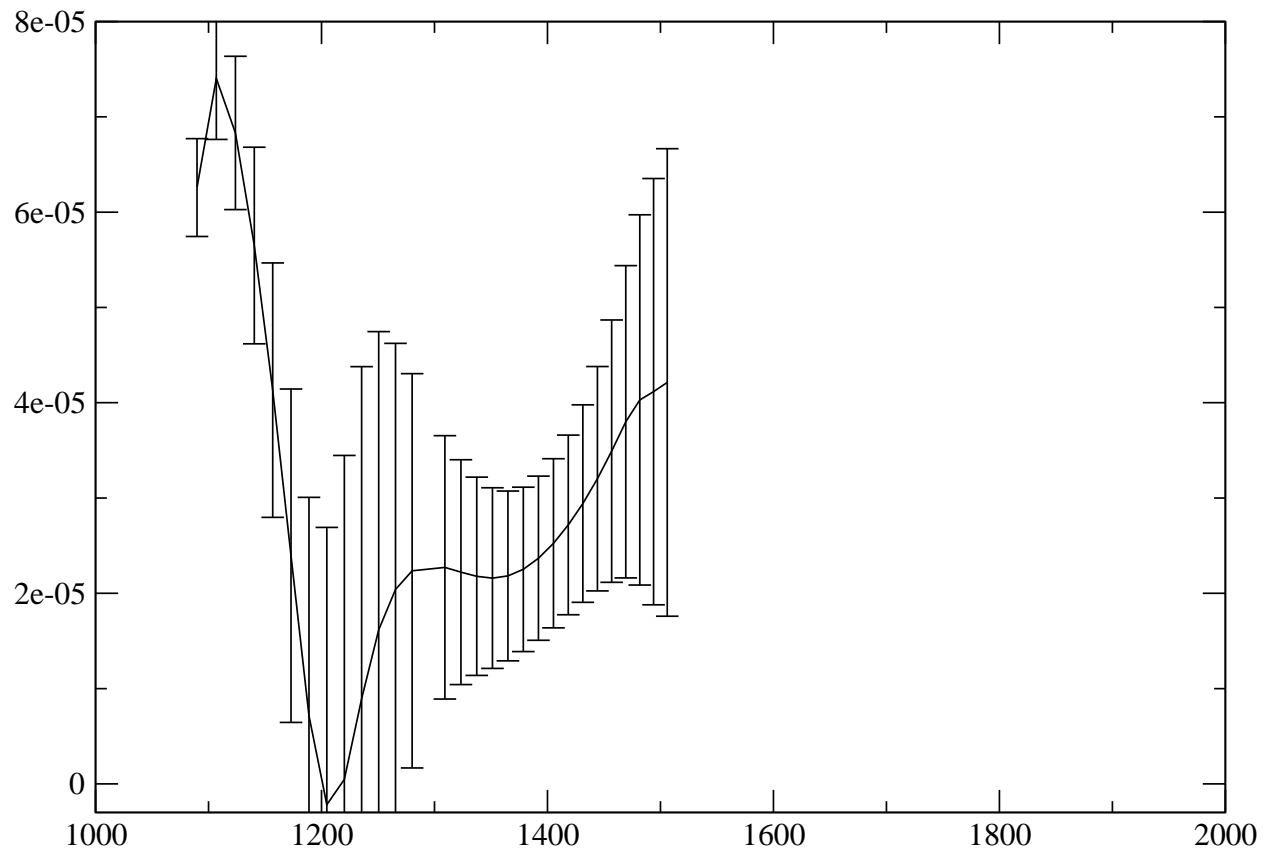


Figure 12: 1.1 GeV (2.5T)  $\delta_{LT}$  integrand.



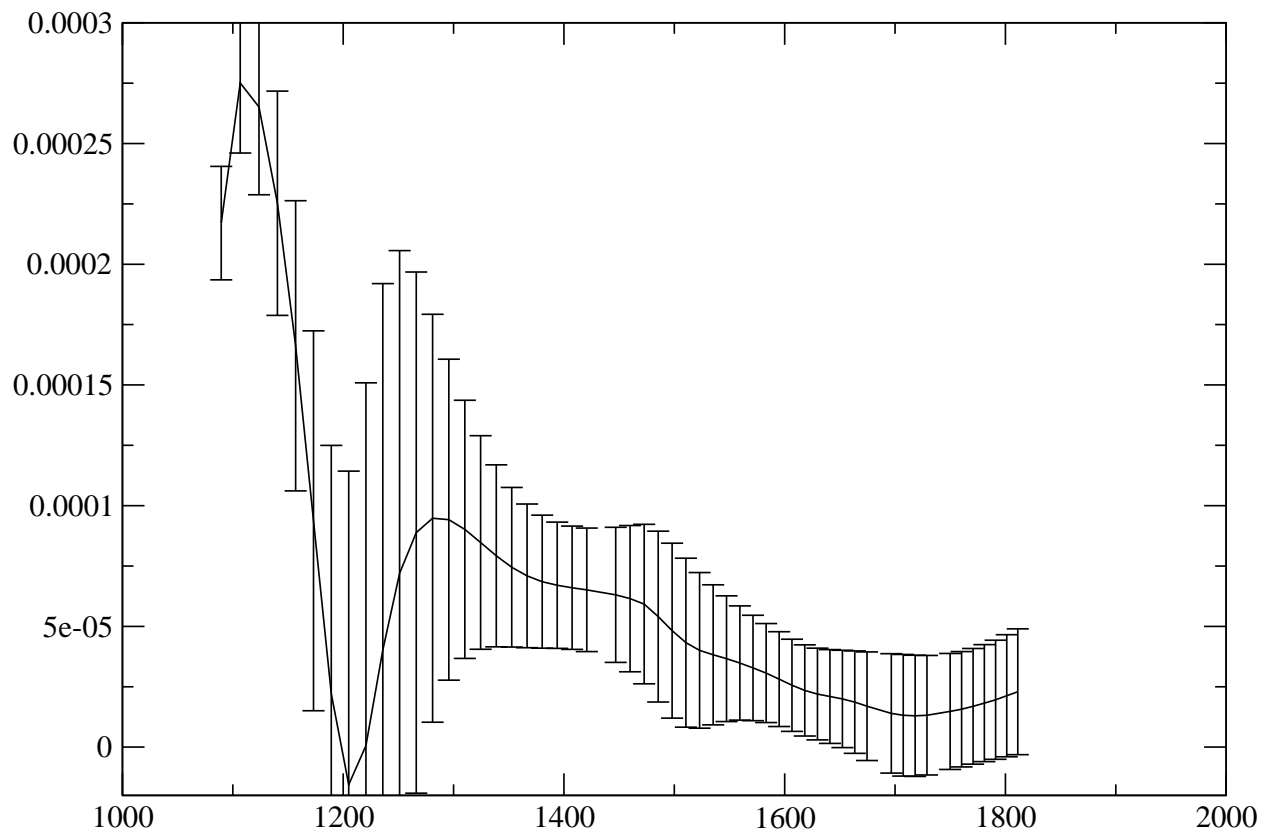


Figure 13: 1.7 GeV (2.5T)  $\delta_{LT}$  integrand.

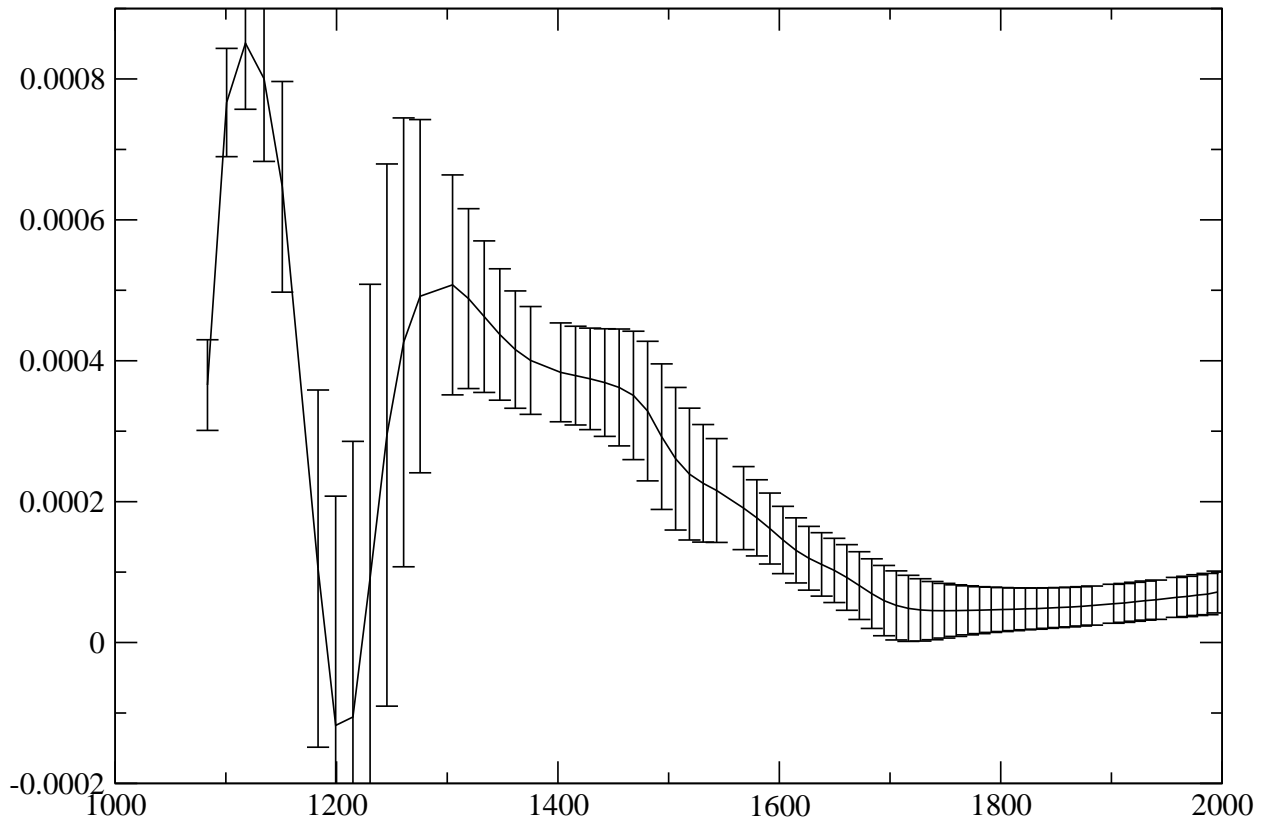


Figure 14: 2.2 GeV (2.5T)  $\delta_{LT}$  integrand.

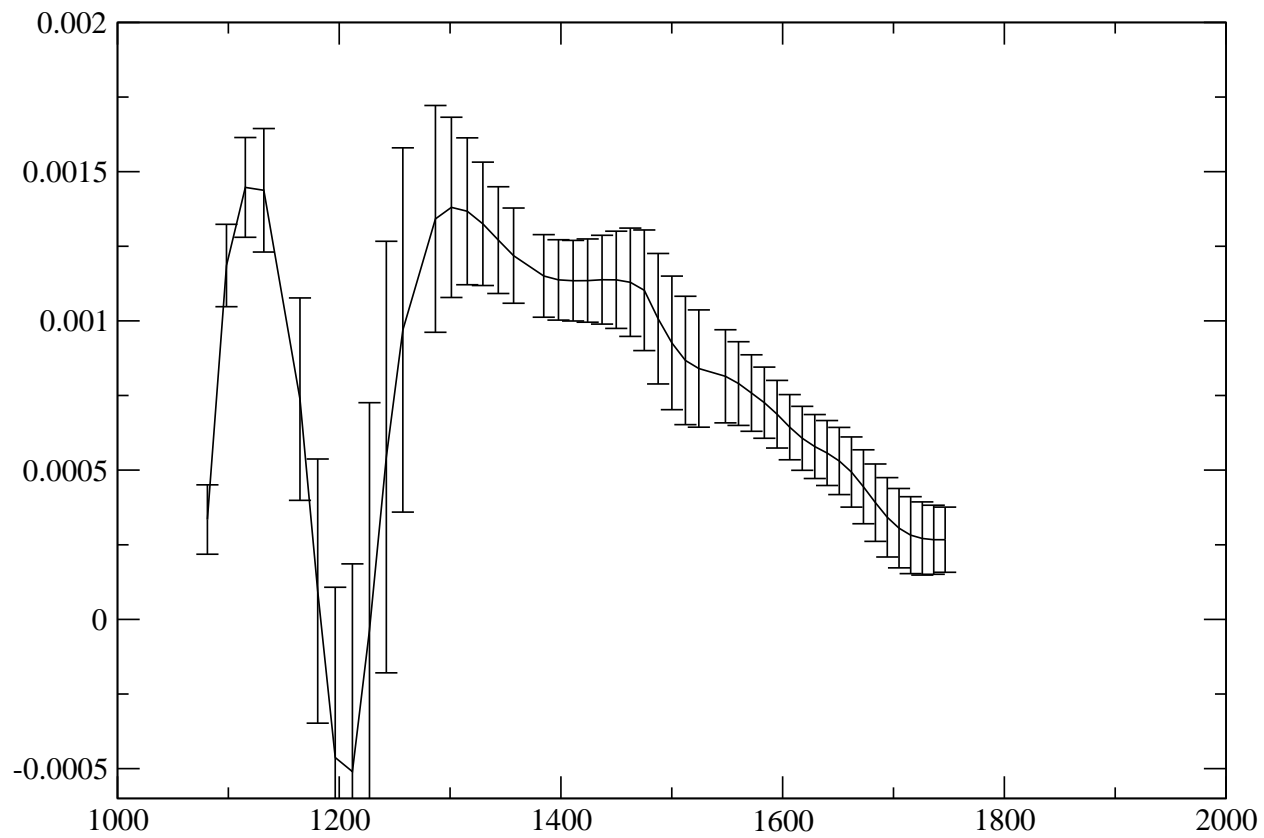


Figure 15: 2.2 GeV (5.0T)  $\delta_{LT}$  integrand.

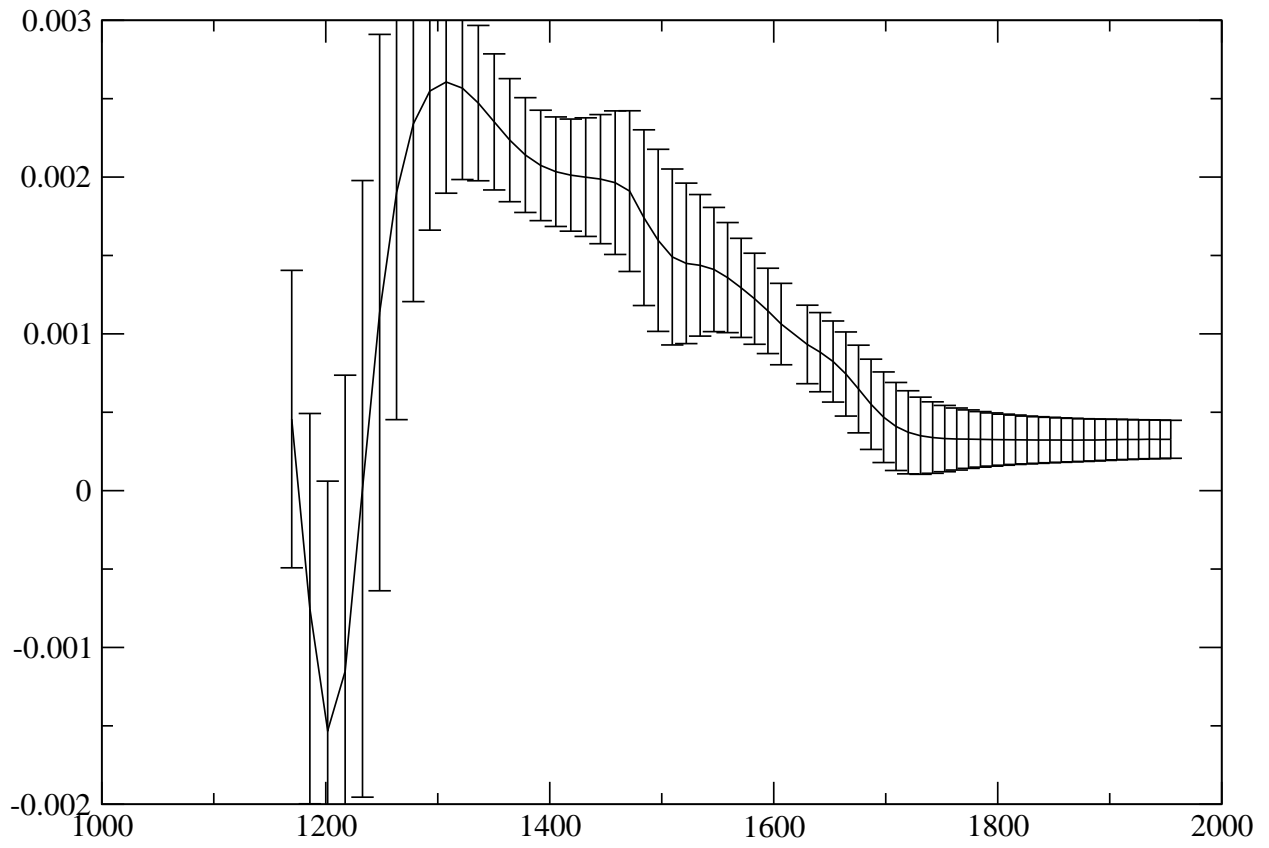


Figure 16: 3.3 GeV (5.0T)  $\delta_{LT}$  integrand.

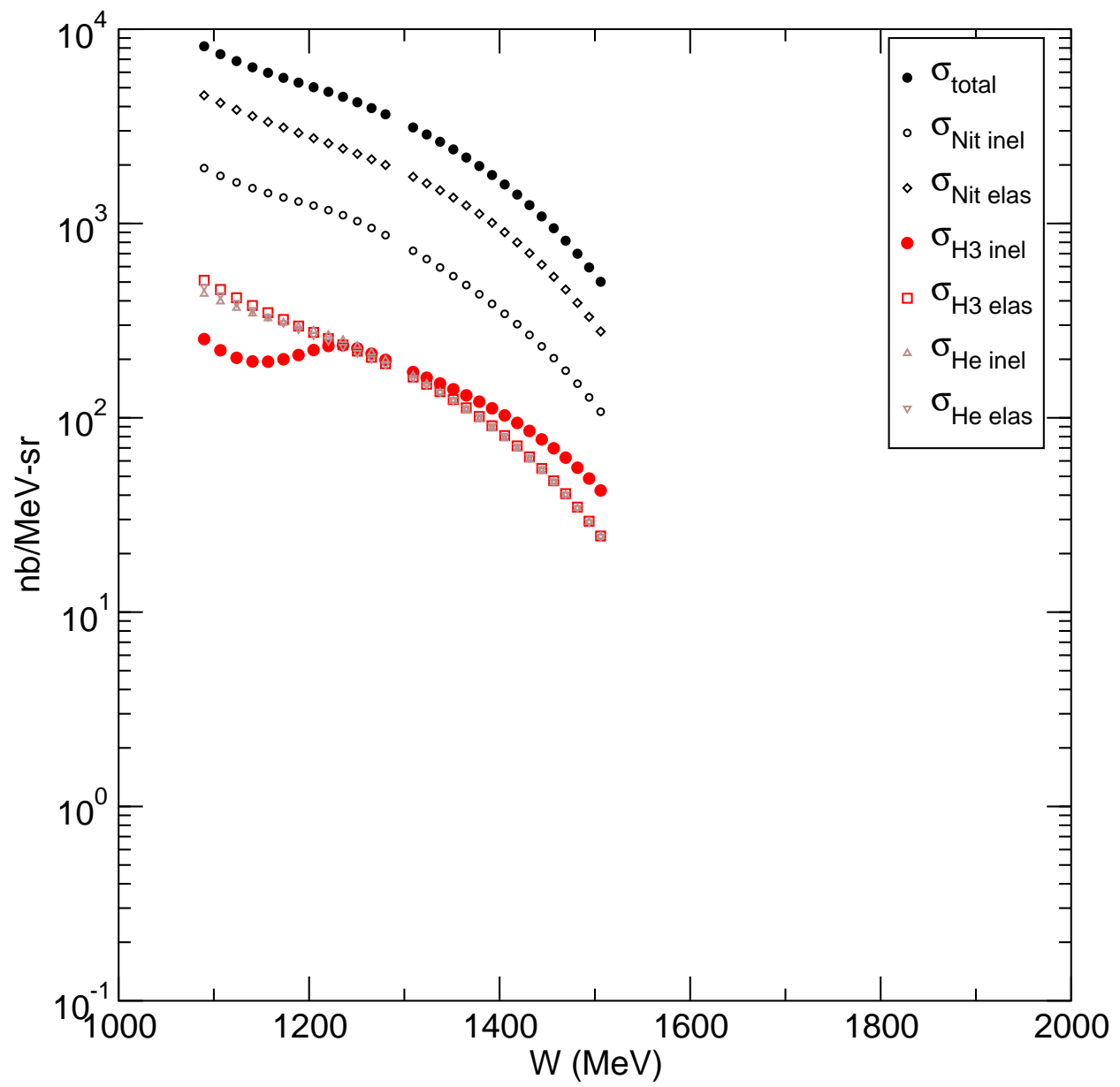


Figure 17: 1.1 GeV (2.5T) Cross section.

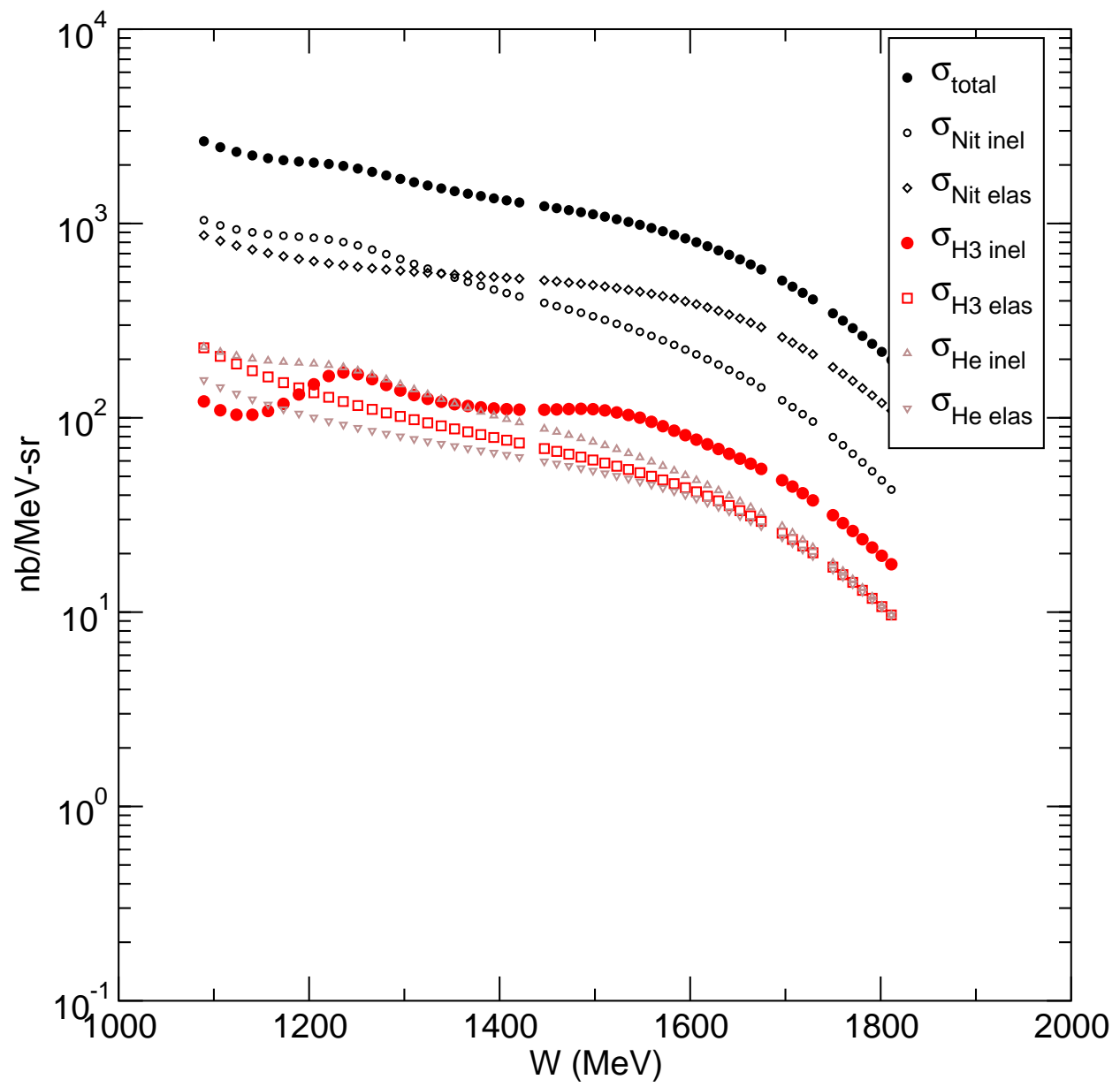


Figure 18: 1.7 GeV (2.5T) Cross section.

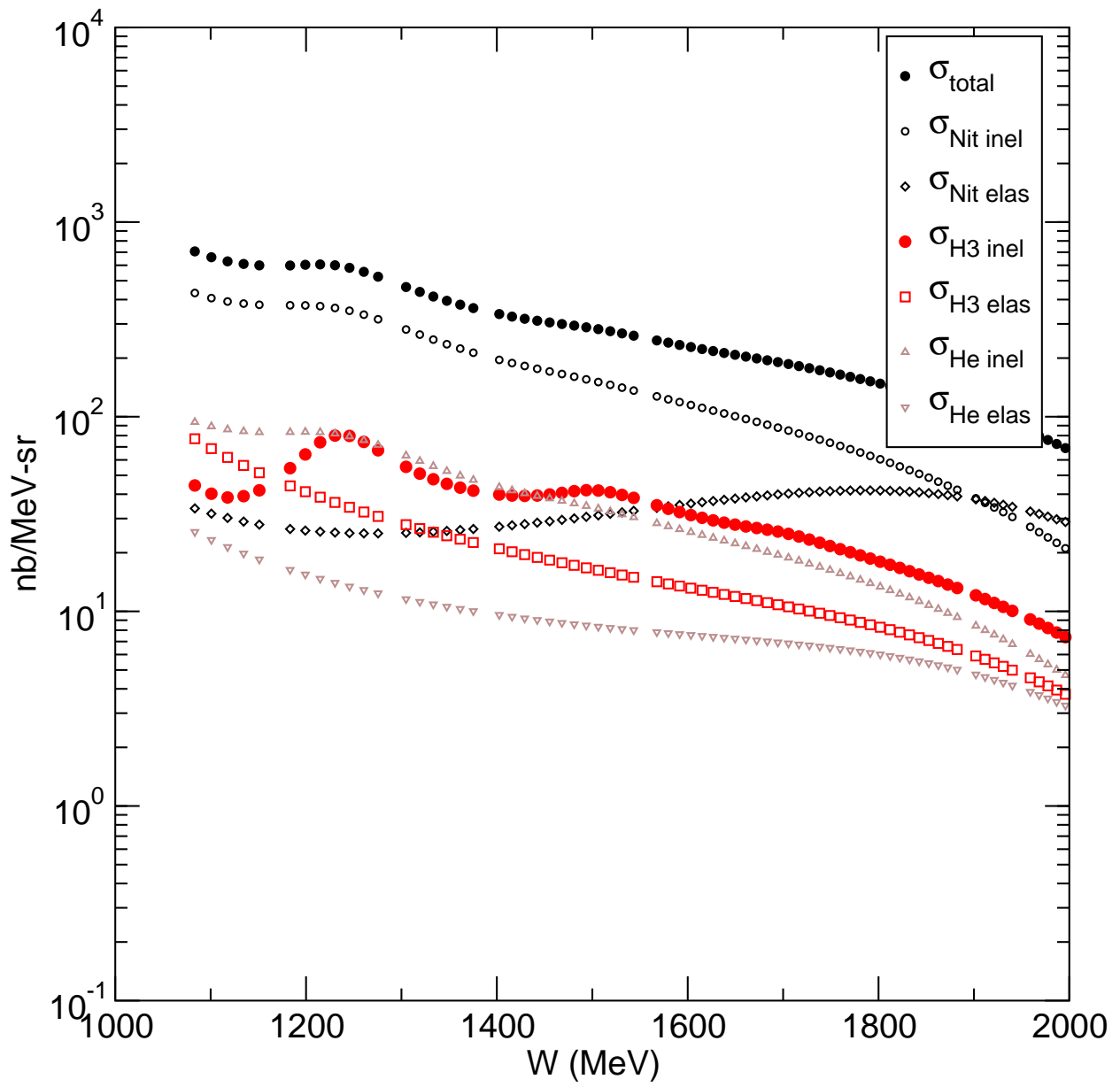


Figure 19: 2.2 GeV (2.5T) Cross section.

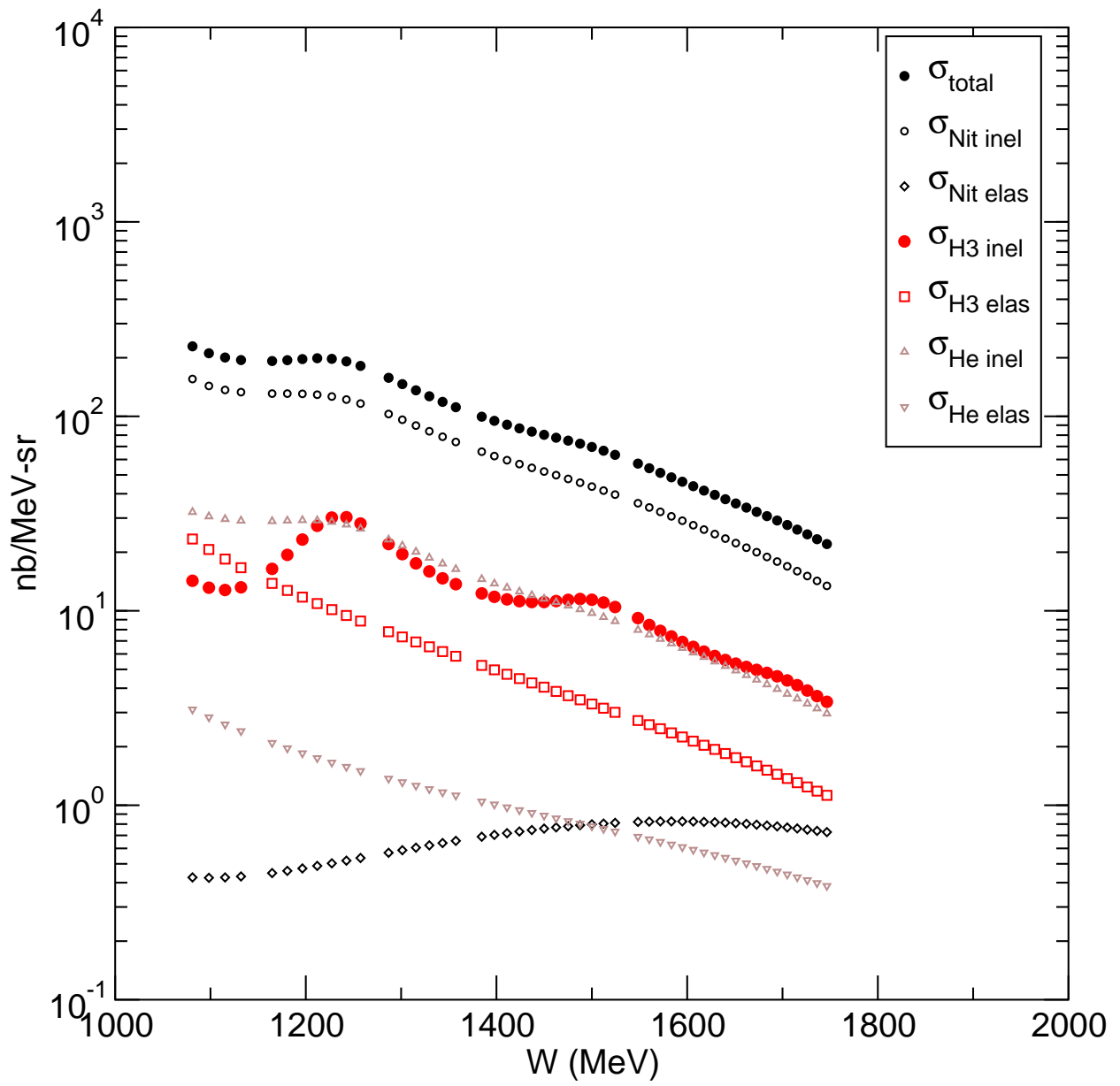


Figure 20: 2.2 GeV (5.0T) Cross section.



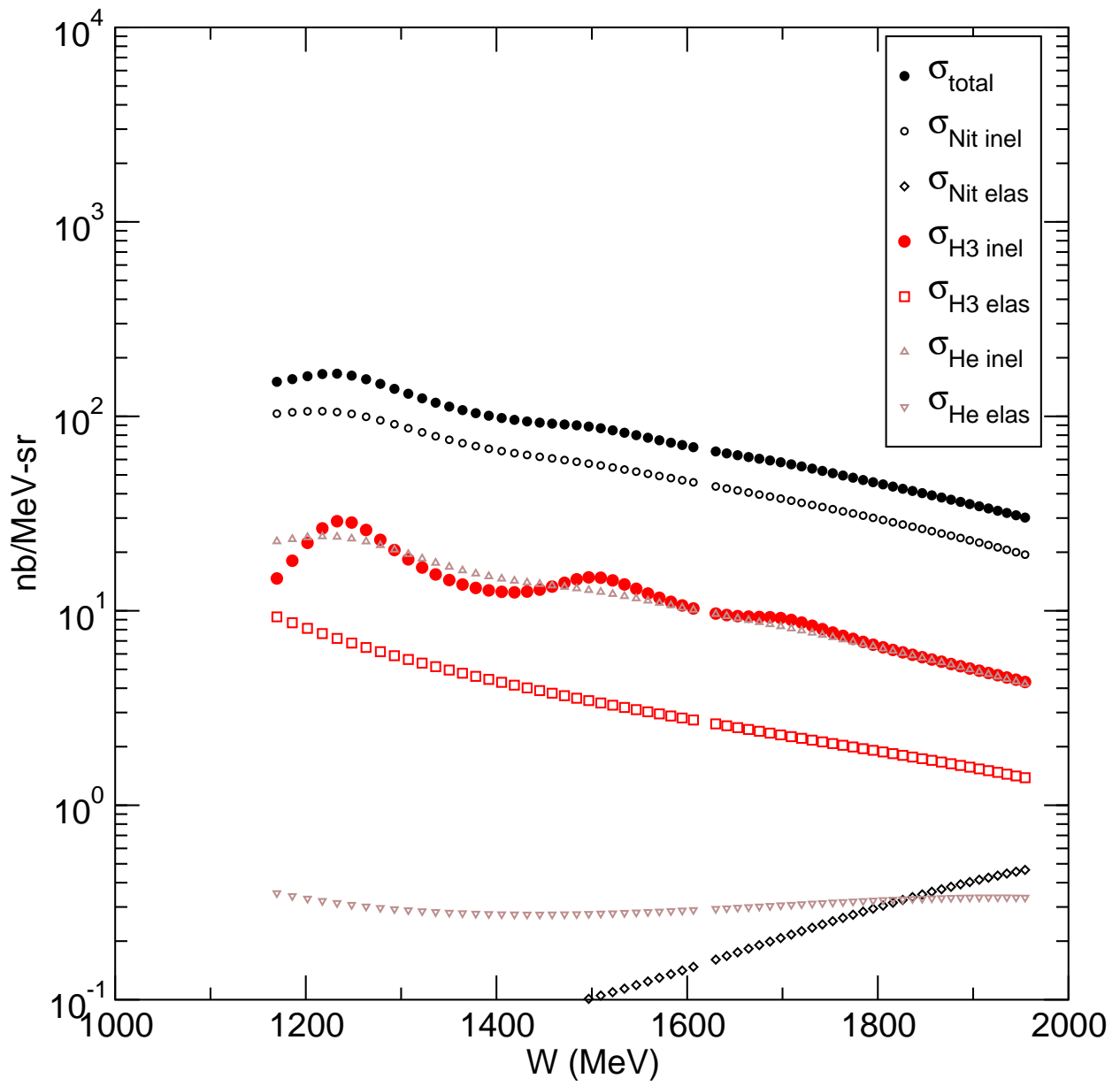


Figure 21: 3.3 GeV (5.0T) Cross section.