

Search for Hybrid Baryons with CLAS12 in Hall B

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A. Run condition

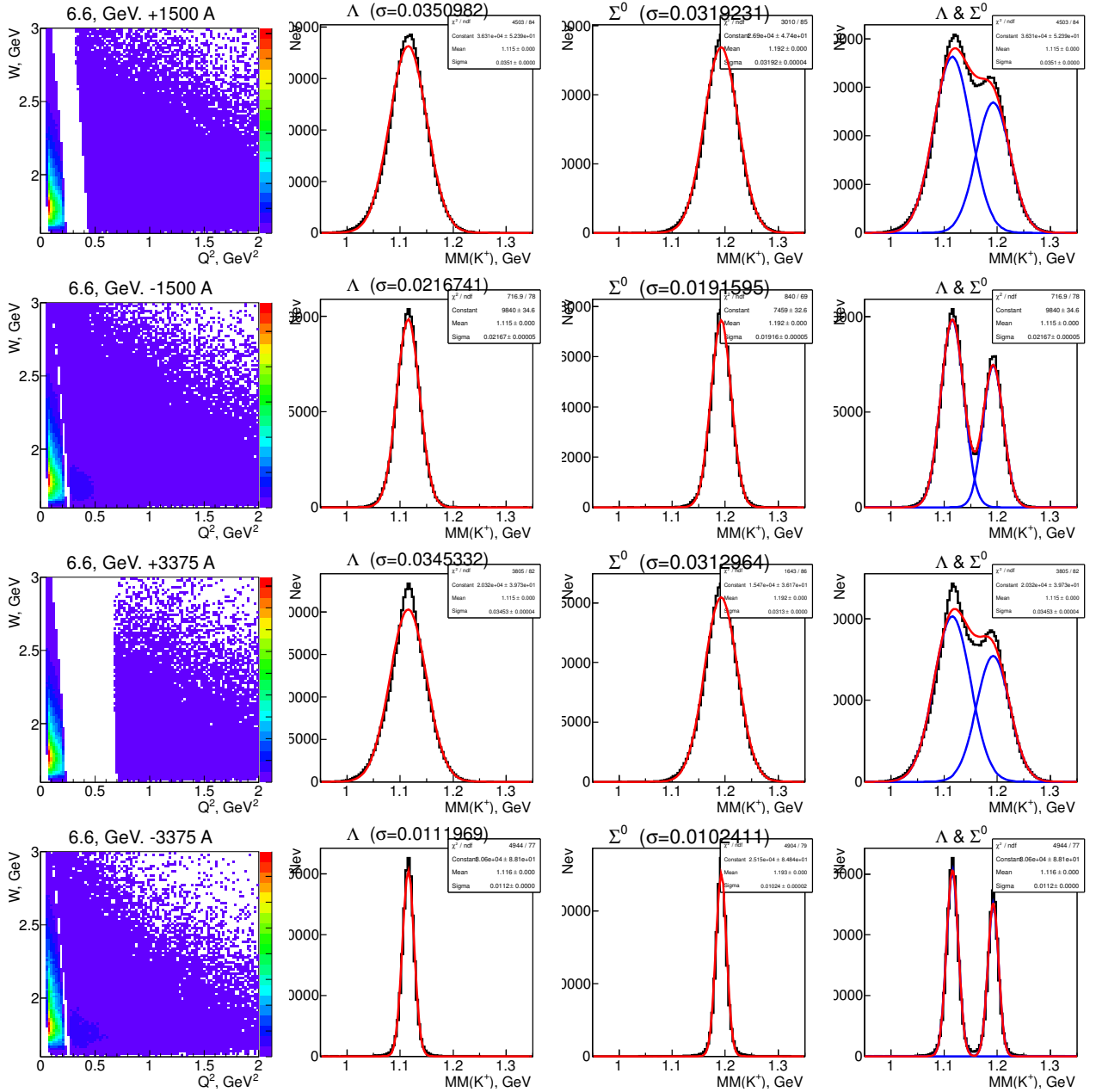


FIG. 1: ...

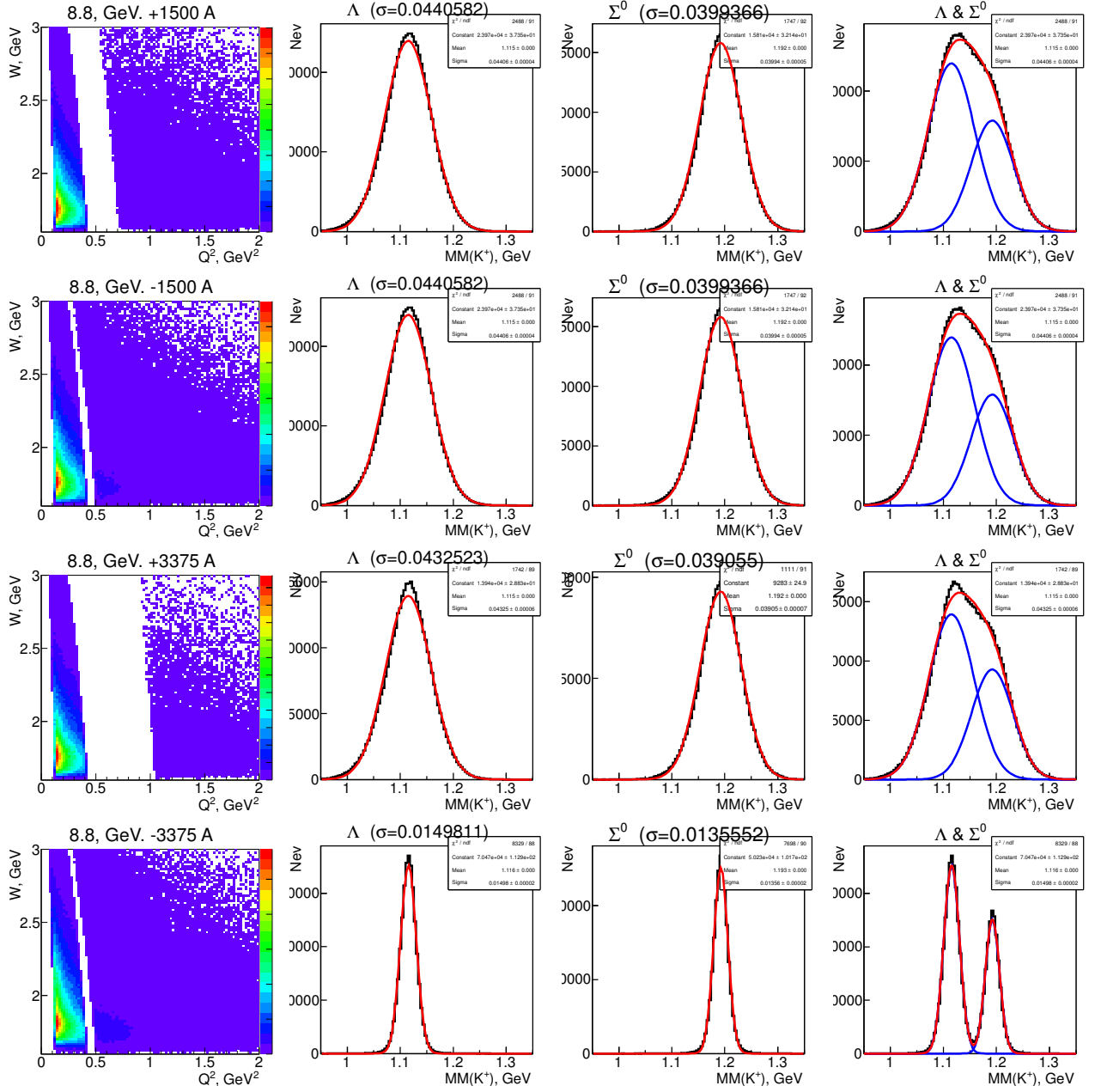


FIG. 2: ...

TABLE I: Minimal achievable Q^2 (Q_{min}^2) at different run conditions.

$E_{beam}, \text{ GeV}$	Tor. current, A	$Q_{min}^2, \text{ GeV}^2$
6.6	+1500	0.05
6.6	-1500	0.05
6.6	+3375	0.05
6.6	-3375	0.05
8.8	+1500	0.1
8.8	-1500	0.1
8.8	+3375	0.1
8.8	-3375	0.1

B. Count rates from $K^+\Lambda$

TABLE II: Estimated event rates taking into account acceptance of CLAS12 for the sub-channel $ep \rightarrow eK^+\Lambda \rightarrow eK^+p\pi^-$. Electron and two hadrons are required to be accepted.

E_{beam} , GeV; Tor. cur, A	R_Λ , Hz
6.6; -3375	91
8.8; -3375	58

The obtained event rate should be reduced by 8%, as 8% of the events do not have reconstructed kaon and by 36%, since the Λ decay branching fraction to the channel (p, π^-) is 64%. Assuming the Λ electroproduction rate is 91 Hz, we expect to collect in 30 days of the beam time $91 \text{ Hz} \times 92\% \times 64\% \times 30 \text{ days} \approx 1.4 \times 10^8$ events.

C. Monte-Carlo studies of the for hybrid baryon manifestation in exclusive KY electroproduction

The number of events in each multidifferential bin was calculated assuming the total number of $K\Lambda$ events to be collected in the experiment is 1.4×10^8 (see section B).