4 September, 2000
DESY-HH

HERA-B status

M. Medinnis
DESY

Conditions, efficiency

- Good running conditions
- Smooth cohabitation
- Coasting beam – situation improving but clean conditions only with inner and below wires
- Bunch uniformity sometimes problematic, causes: CB kicker, mysterious
- Beam tail shaping (for improving stability, particularly at high rate) looks promising but needs more work

- Target time / Lumi time $> 90\%$
- DAQ time / Target time $\approx 50\%$
- Remainder: commissioning needs, "context switching", system instability (crashing processes, synchronization losses for various reasons...)

Major data sets, 2000

Type	Start	Stop	Trigger			Events	Time(min)	
			Pre	FLT	SLT	$\cdot 10^{-6}$	total	live
Min Bias	10 Apr	14 Apr	-	-	-	2	-	-
Di-lepton	29 Apr	13 Jun	E	-	V,2	12	10387	7508
Di-lepton	15 Jun	27 Jun	E	-	OV,2	1	1385	953
Di-lepton	28 Jun	16 Aug	Eμ	-	OV,2	3.7	9363	4853
Hard γ	17 Aug	17 Aug	E	-	-	0.6	390	375
Single lepton	17 Aug	18 Aug	μ	1	OV,1	1.4	362	116
Di-lepton	18 Aug	22 Aug	Eμ	1	OV,2	1.0	1297	995
Single lepton	24 Aug	25 Aug	Eμ	1	OV,1	3.1	831	465

Notes

Interaction rate: mainly 5 MHz, except Single lepton: 2 MHz

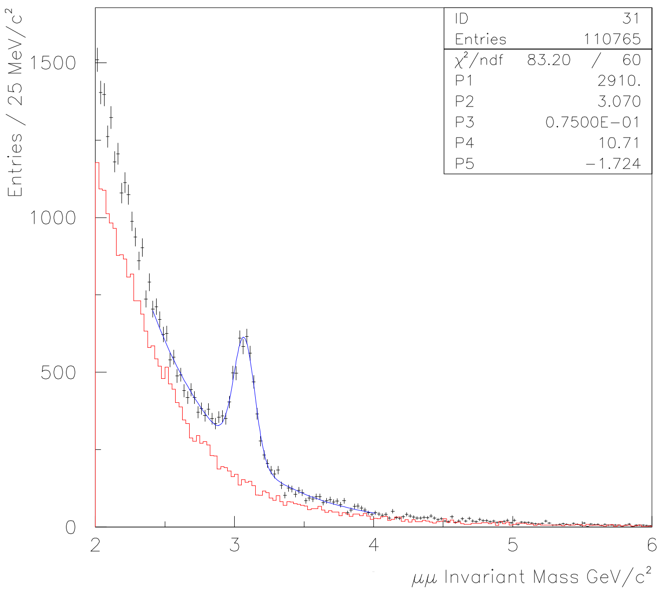
Pretriggers: E $\Rightarrow$ ECAL, $\mu \Rightarrow$ Muon

FLT: 1 $\Rightarrow$ 1 track

SLT:
1 $\Rightarrow$ 1 track, 2 $\Rightarrow$ 2 tracks
V $\Rightarrow$ Vertex detector tracking
O $\Rightarrow$ Outer tracker tracking

Di-lepton triggers

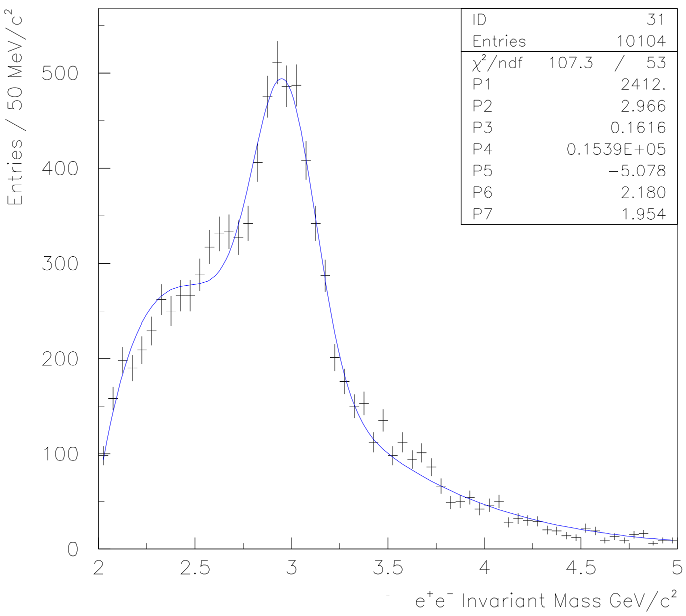
$J/\psi \to \mu^+\mu^-$



— unlike sign

— like sign

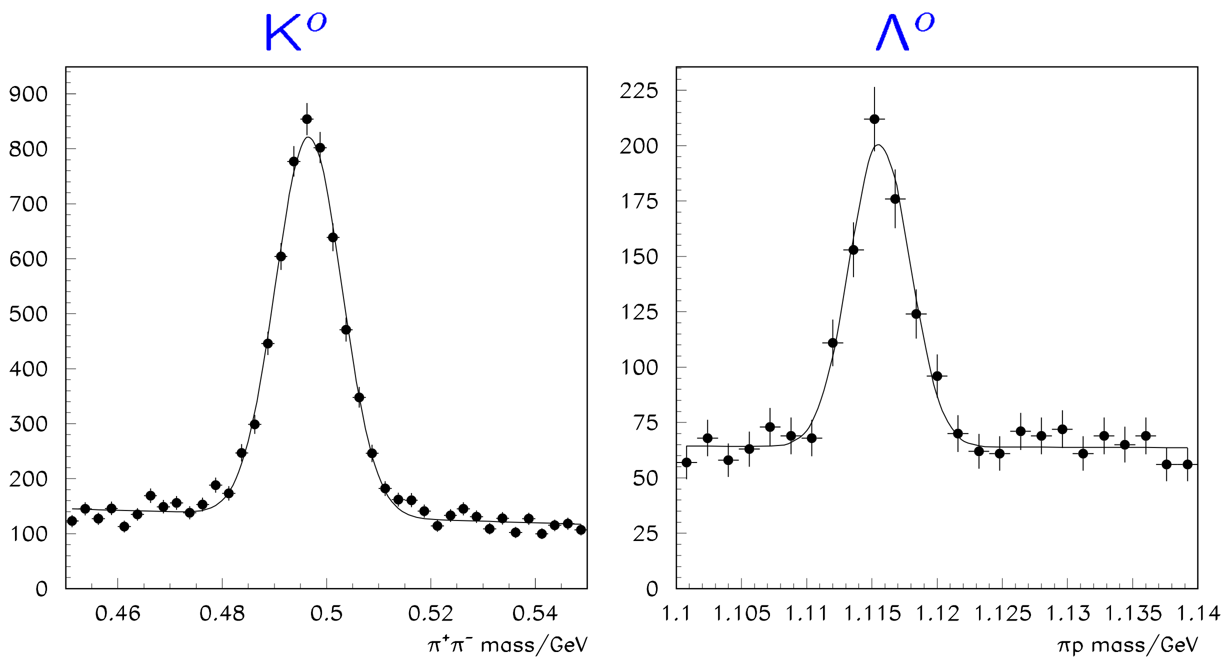
$J/\psi \to e^+e^-$



bremsstrahlung

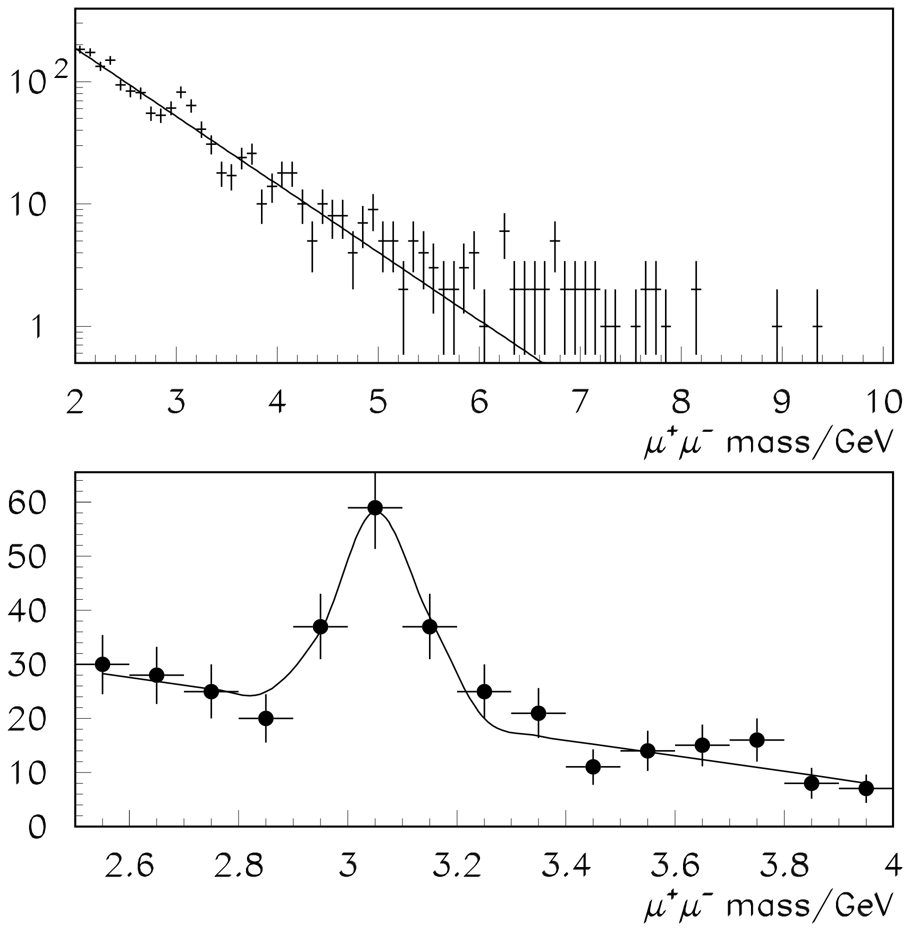
for electron id

Single lepton trigger



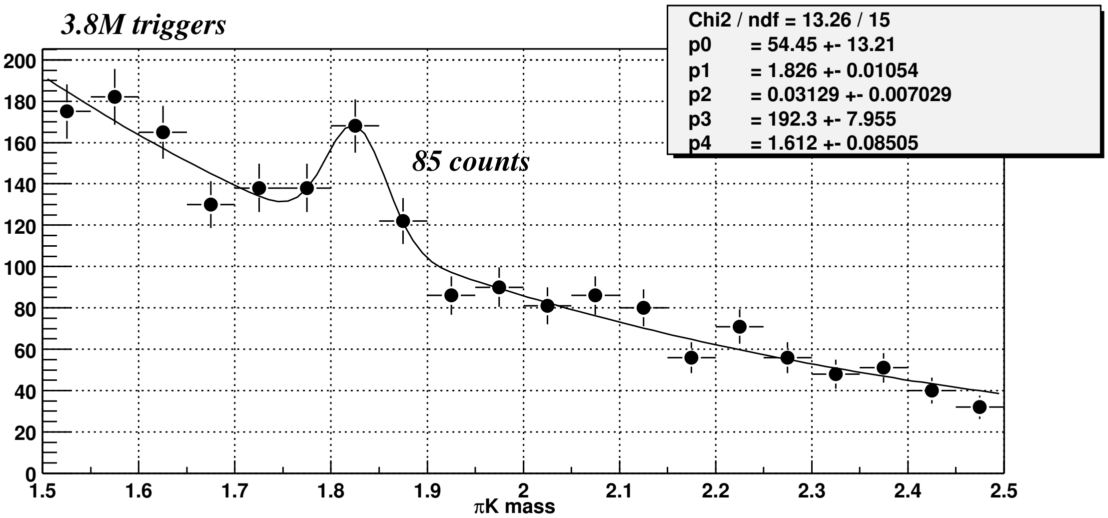
Single lepton trigger

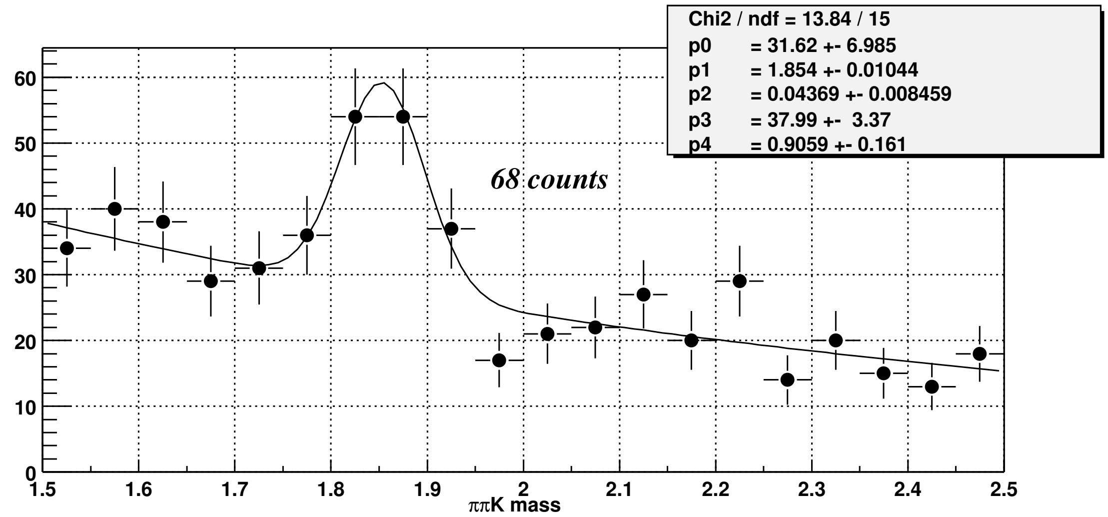
J/ψ



All triggers

D^o, $D^\pm$





Summary

Most subsystems working well, some problems:

- ITR: efficiency $\approx 80\%$. Under study. Usable for tracking, problematic for FLT.
- Muon: Efficiency of pad chambers low (70%). Used in FLT.
- HiPt: arrived too late. Commissioning during run proved impossible.
- OTR: HV shorts were appearing at an alarming rate (up to several per day). Not yet understood. Adding an additional decoupling resistor appears to solve the problem.
- FLT: In last week, successful run of 1-track trigger. Commissioning continues.