Jet20 occupancies and time dependence

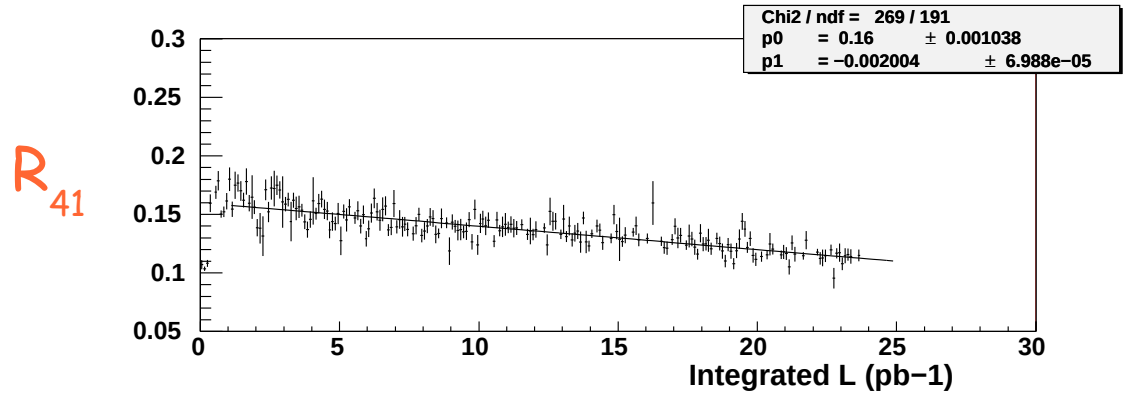
- Part I : JCOR & CALO–SMX meetings, occupancies
- Part II : JCOR meeting, update on dijet balance

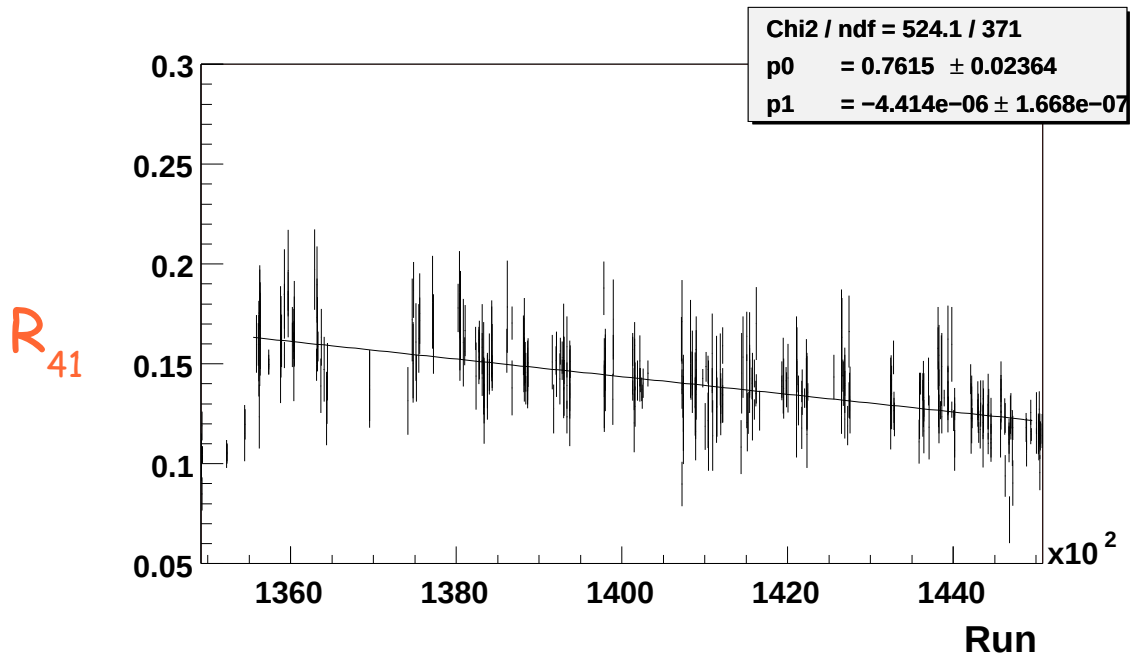
Part I : jet occupancies

Starting point

See what Frank Chlebana showed on 6/19/02 ...

Eta4/Eta1





... jet occupancies in Jet20 data:

E_T(jet)>20 GeV

Eta 1: $|\eta|<1$

Eta 4: $|\eta|>2.5$

$$R_{41} \equiv \frac{\text{Njets @ Eta 4}}{\text{Njets @ Eta 1}}$$

Same exercise

- Had a look to absolute occupancies in central, east/west plugs
- Considered ~2 pb^{-1} chunks of data

large non–monotonic variations ...

integrated

stat error negligible

Luminosity [nb^{-1}]	central	total plug	west plug	east plug	ratio
2006.37	110448	17895	7911	9984	0.162022
4037.27	124891	19574	8617	10957	0.156729
6149.51	127558	18919	8593	10326	0.148317
8005.2	115979	17152	7908	9244	0.147889
10170.1	136522	20022	9625	10397	0.146658
12178.9	124655	16668	8113	8555	0.133713
14022.9	112526	14500	7019	7481	0.128859
16010.8	124651	15373	7596	7777	0.123328
18057.9	142938	17027	8471	8556	0.119122

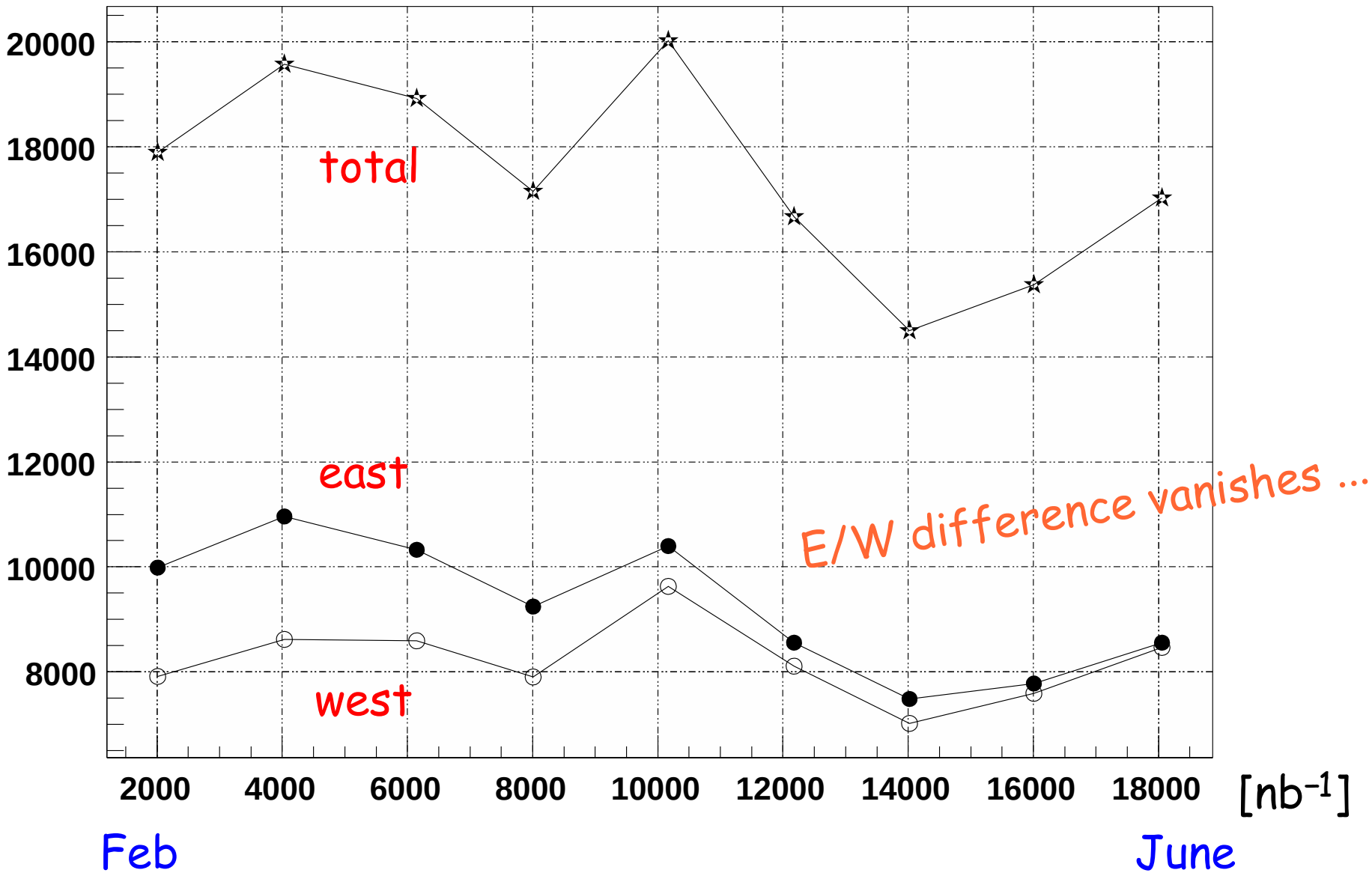
(total plug)/central

monotonic !

☞ in agreement with Frank's plots

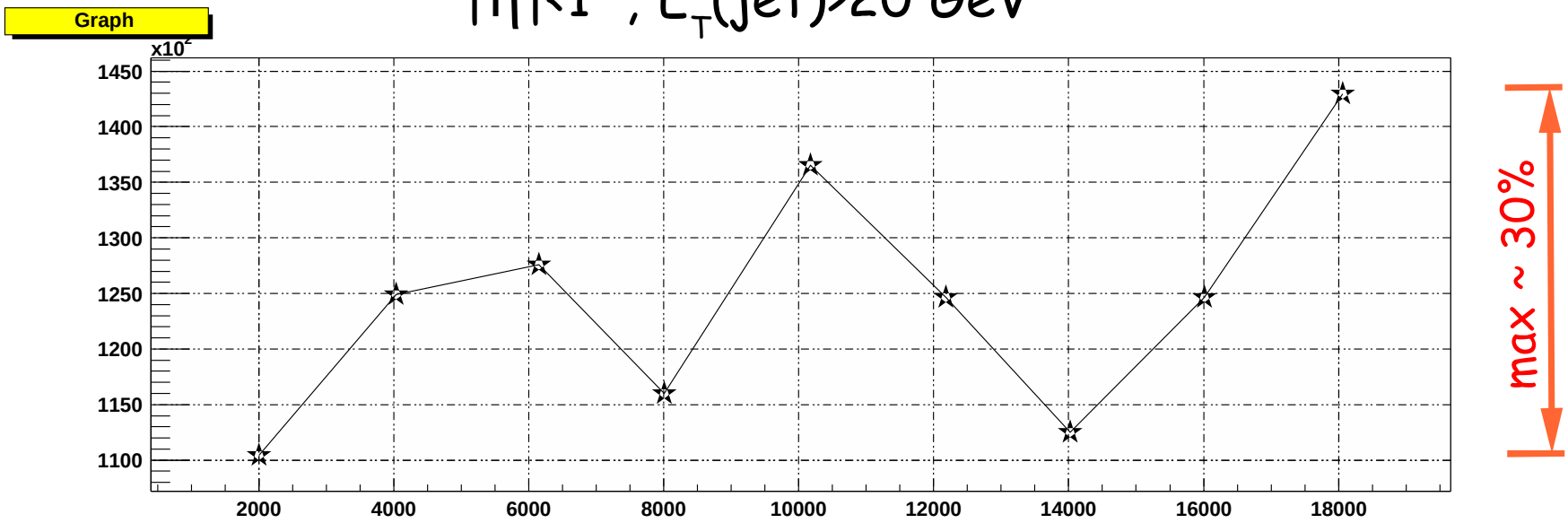
Jet occupancies plug –threshold

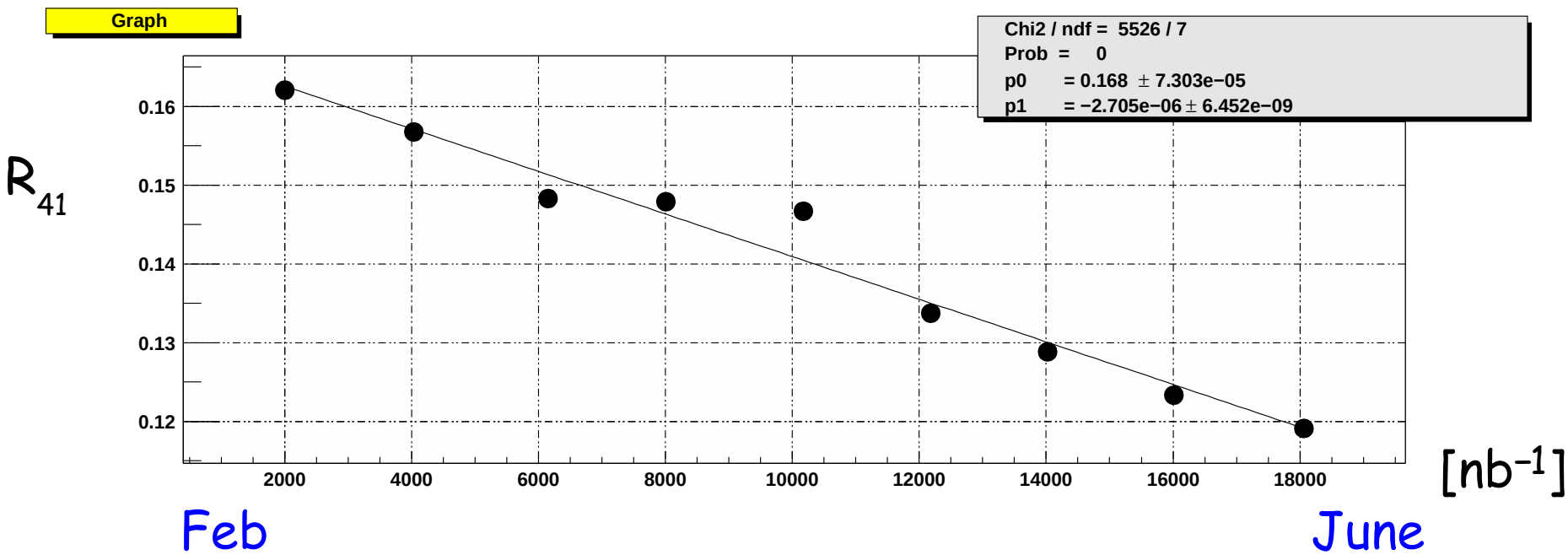
$|\eta|>2.5$, $E_T(jet)>20$ GeV



Jet occupancies central – threshold

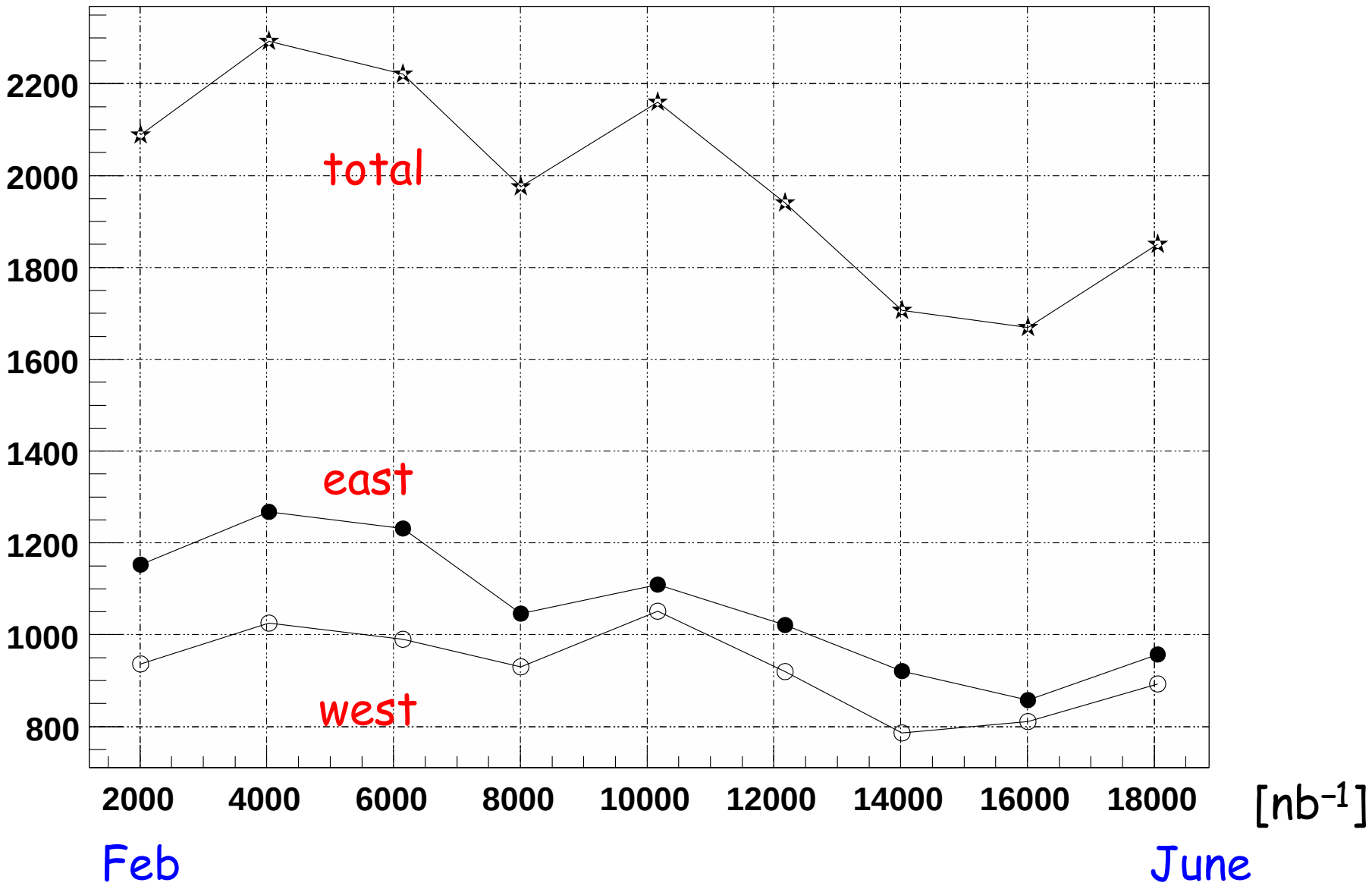
$|\eta|<1$, $E_T(jet)>20$ GeV





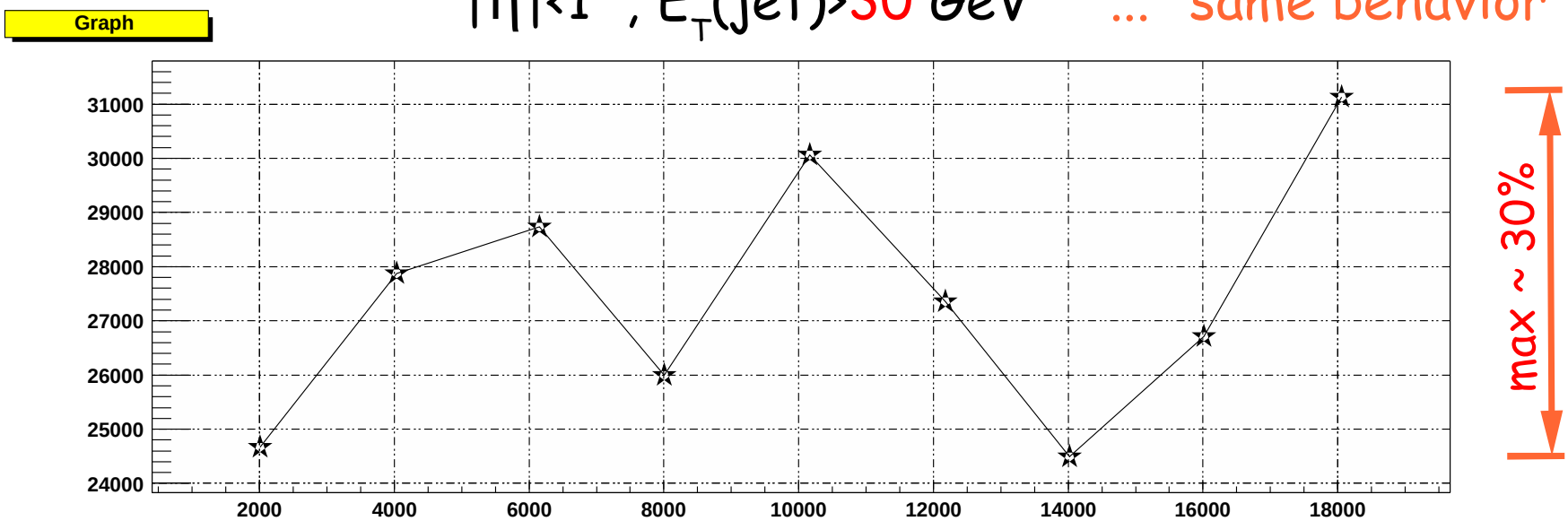
Jet occupancies plug –high

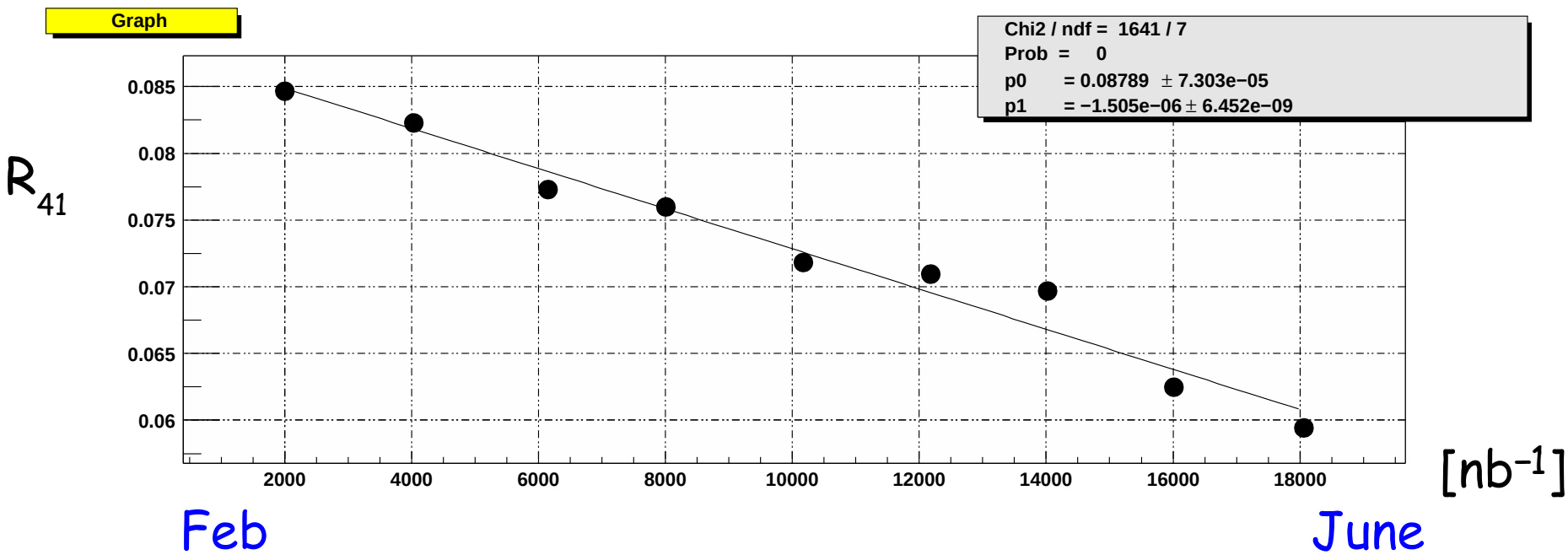
$|\eta|>2.5$, $E_T(jet)>30$ GeV ... same behavior



Jet occupancies central – high

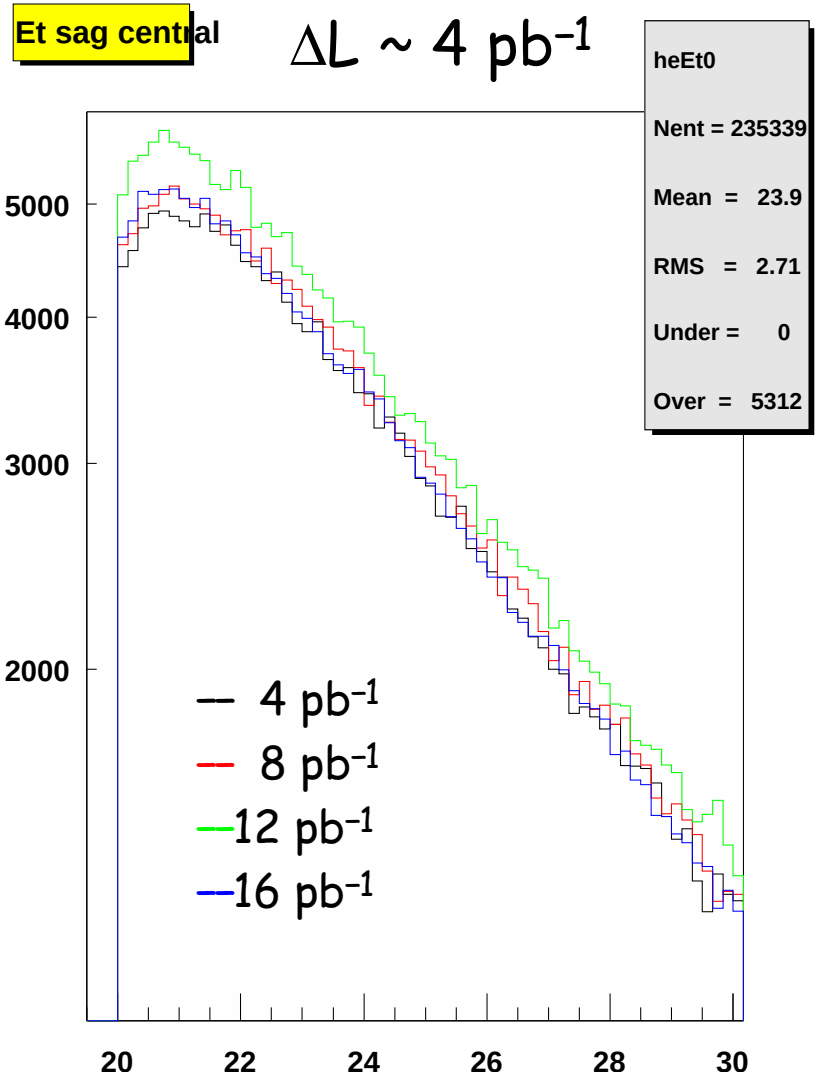
$|\eta|<1$, $E_T(\text{jet})>30$ GeV ... same behavior

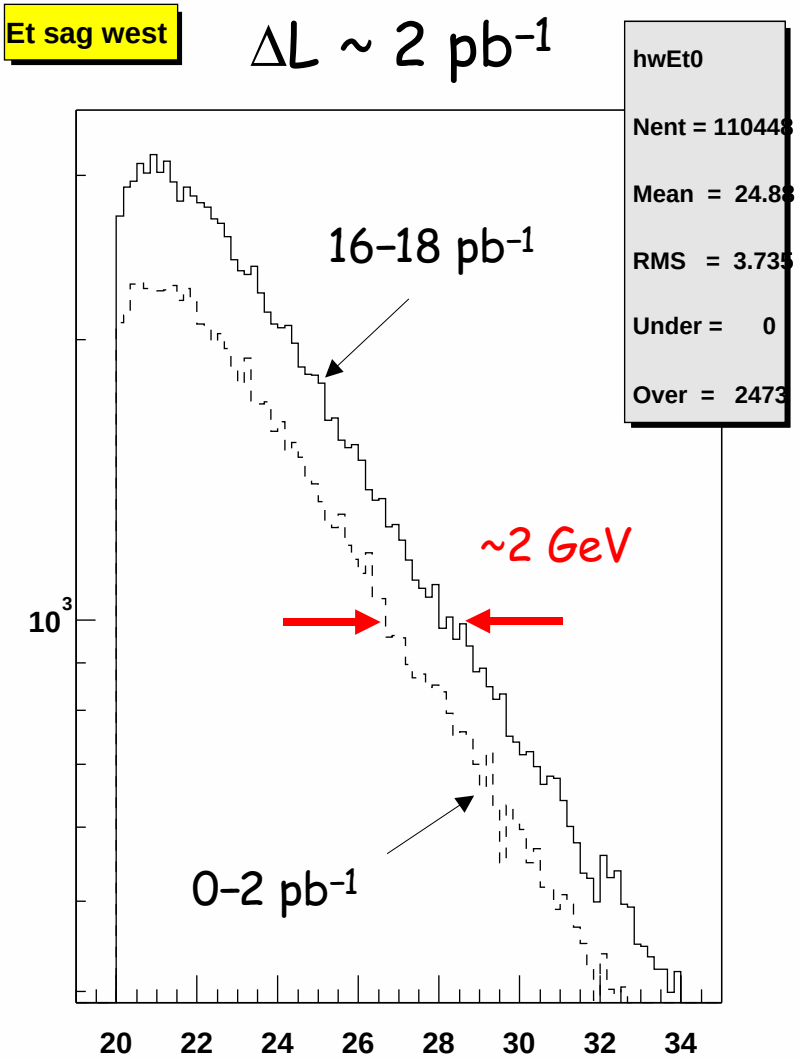




E_T spectra – central

E_T(jet)>20 GeV

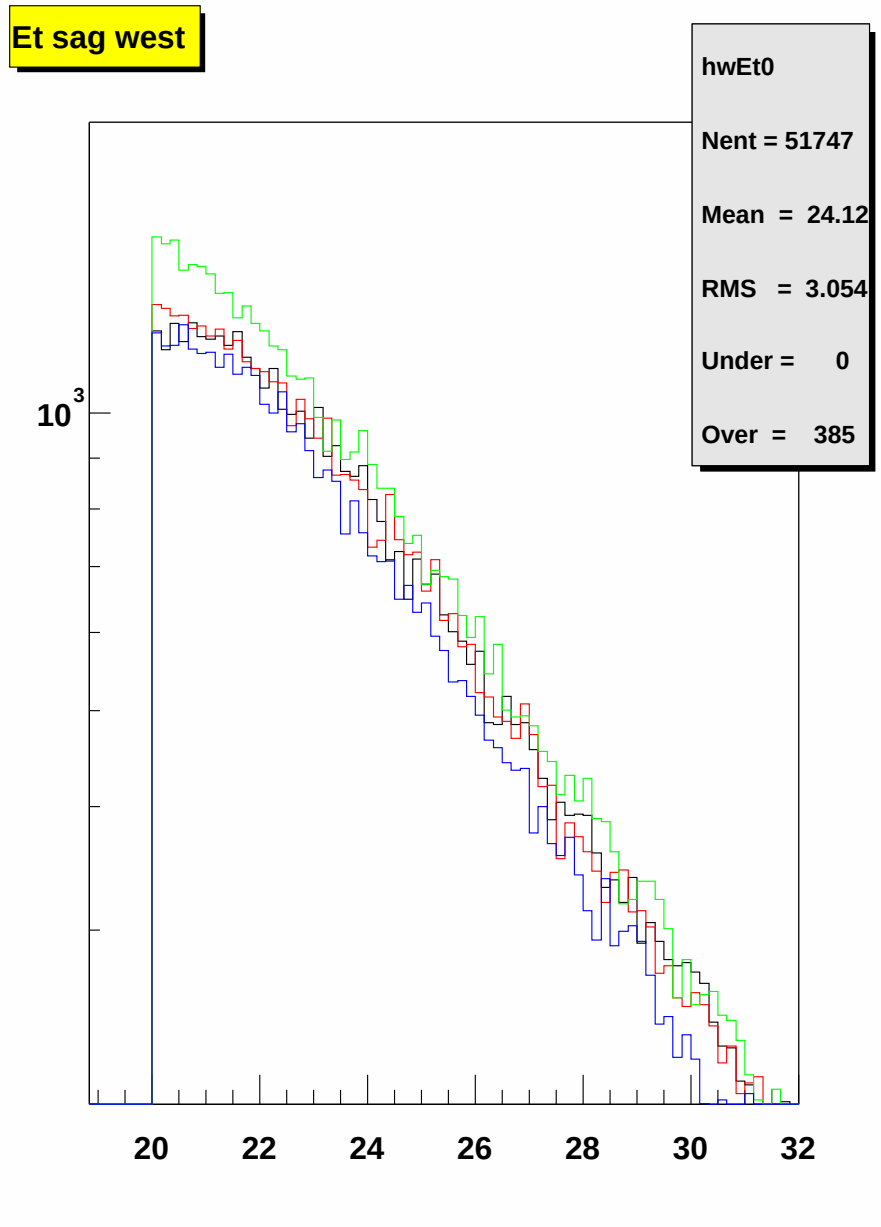


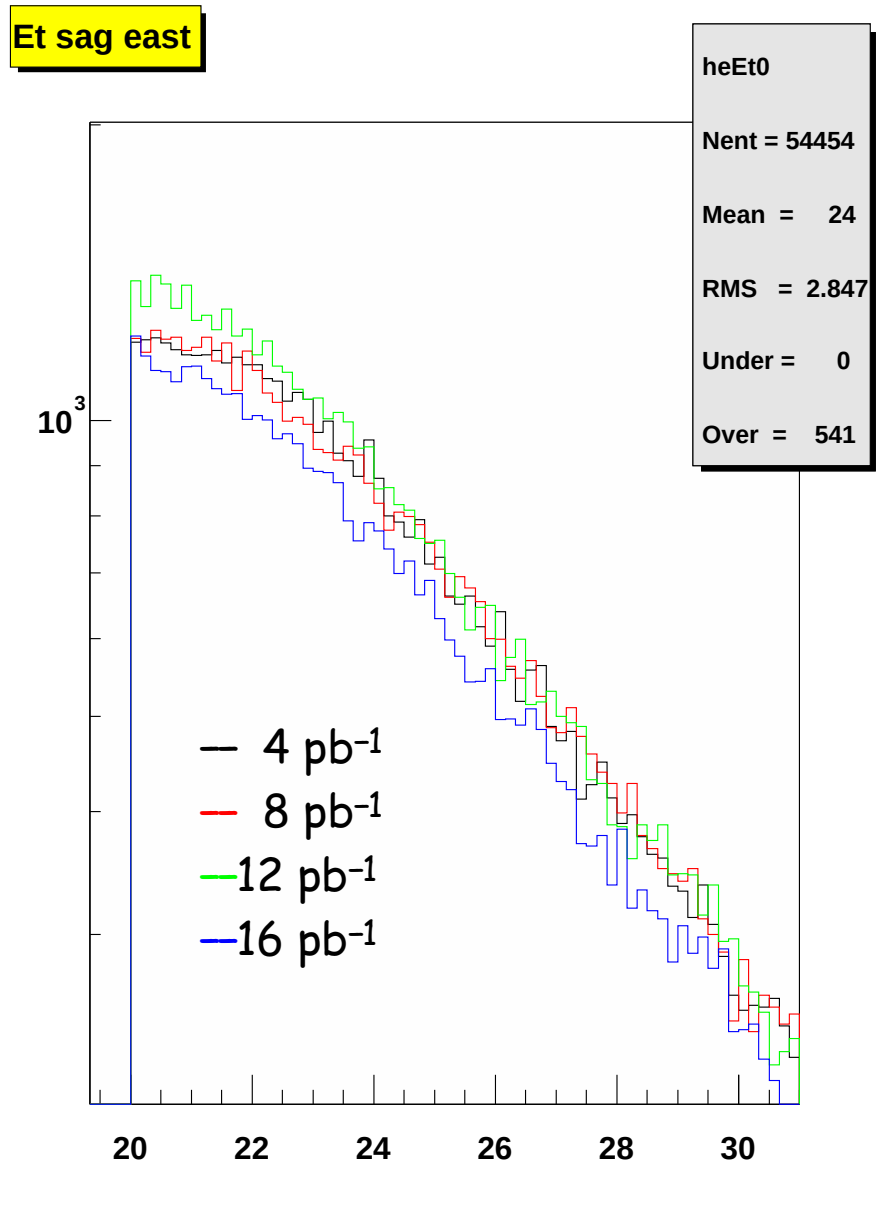


☞ 10% effect for 20 GeV jets !!

E_T spectra – plug

E_T(jet)>20 GeV $\Delta L \sim 4\ pb^{-1}$

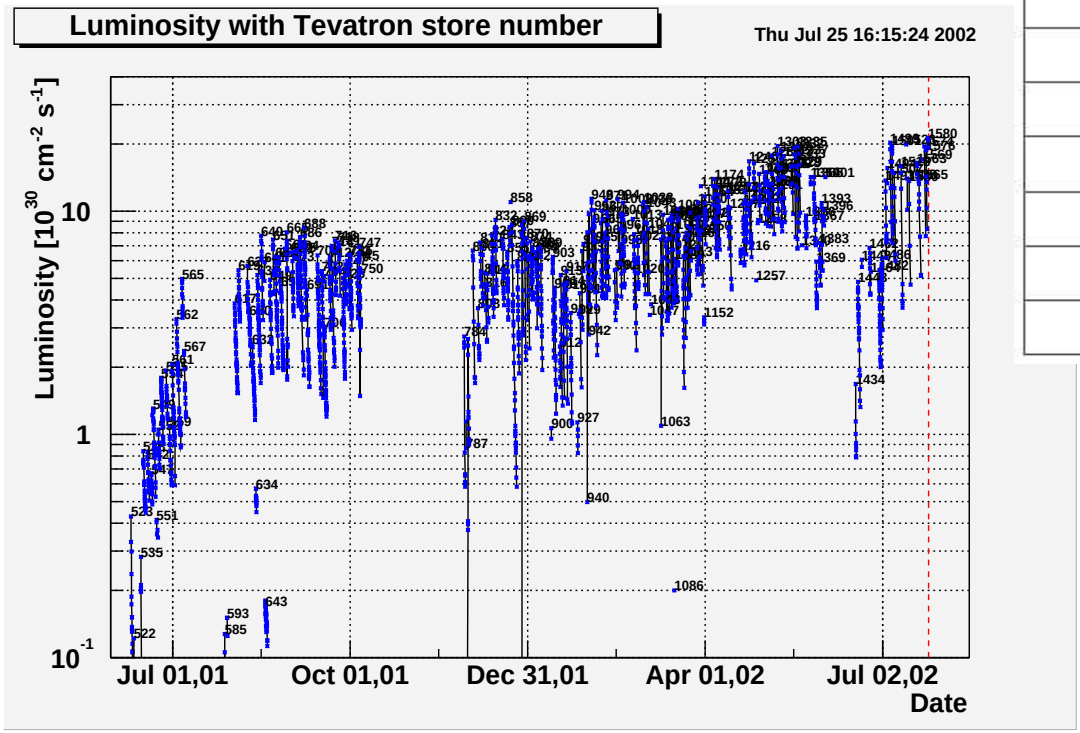




Comments

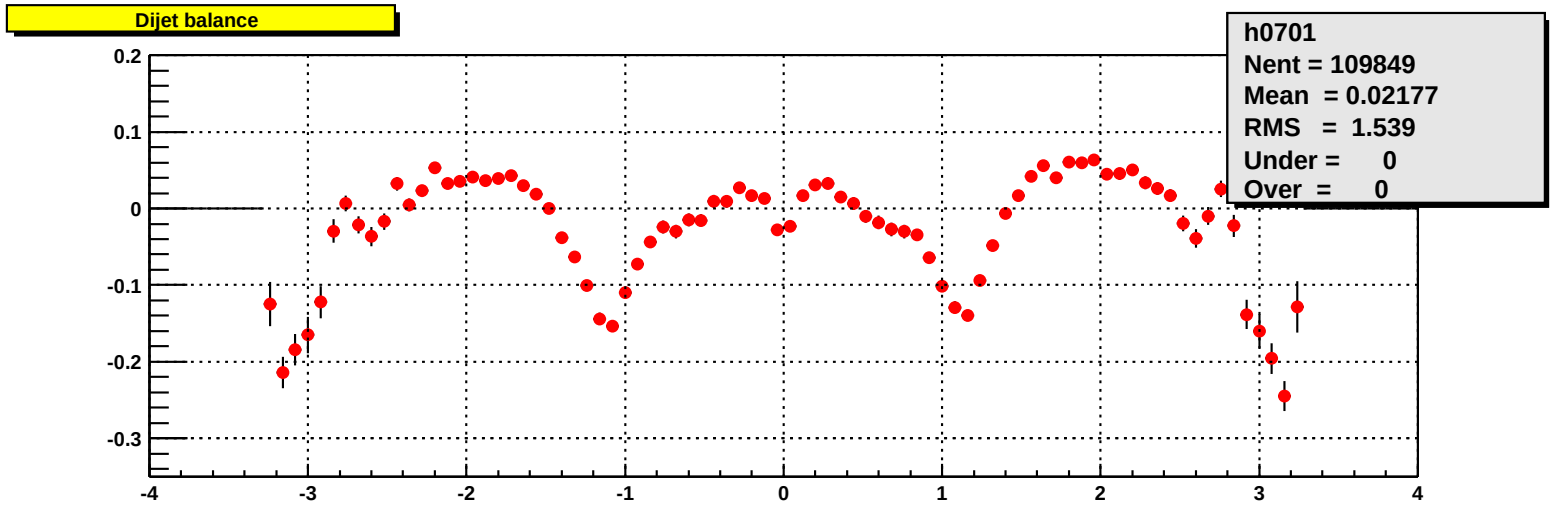
- plug & central move together …
- correct determination of the integrated luminosity ?!
- correlation with the instantaneous luminosity ?!
- triggers – pulse integration ?!

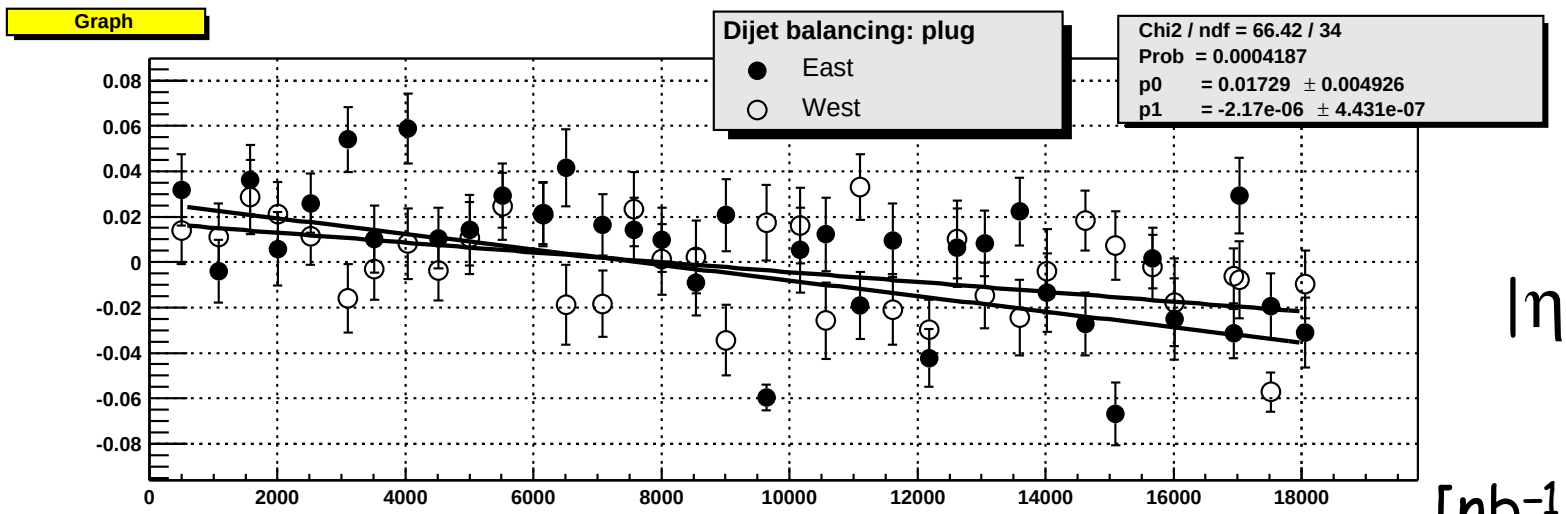
Luminosity [nb^{-1}]	Runs range	Days range
2006.37	138425–139371	Feb/04 – Feb/18
4037.27	139371–140851	Feb/18 – Mar/13
6149.51	140851–141597	Mar/13 – Mar/24
8005.2	141597–142651	Mar/24 – Apr/06
10170.1	142651–143646	Apr/06 – Apr/22
12178.9	143646–144018	Apr/22 – Apr/30
14022.9	144018–144453	Apr/30 – May/06
16010.8	144453–144884	May/06 – May/16
18057.9	144884–145077	May/16 – May/20



Part II : update on dijet balance

Differential time dependence





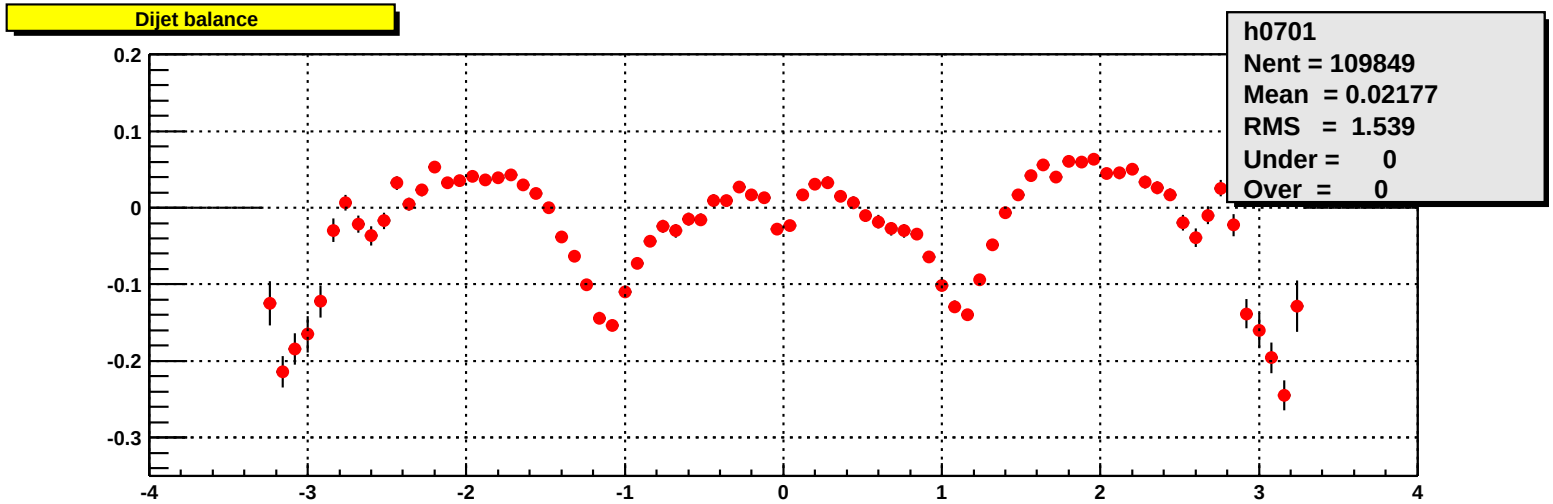
$|\eta|>2.0$

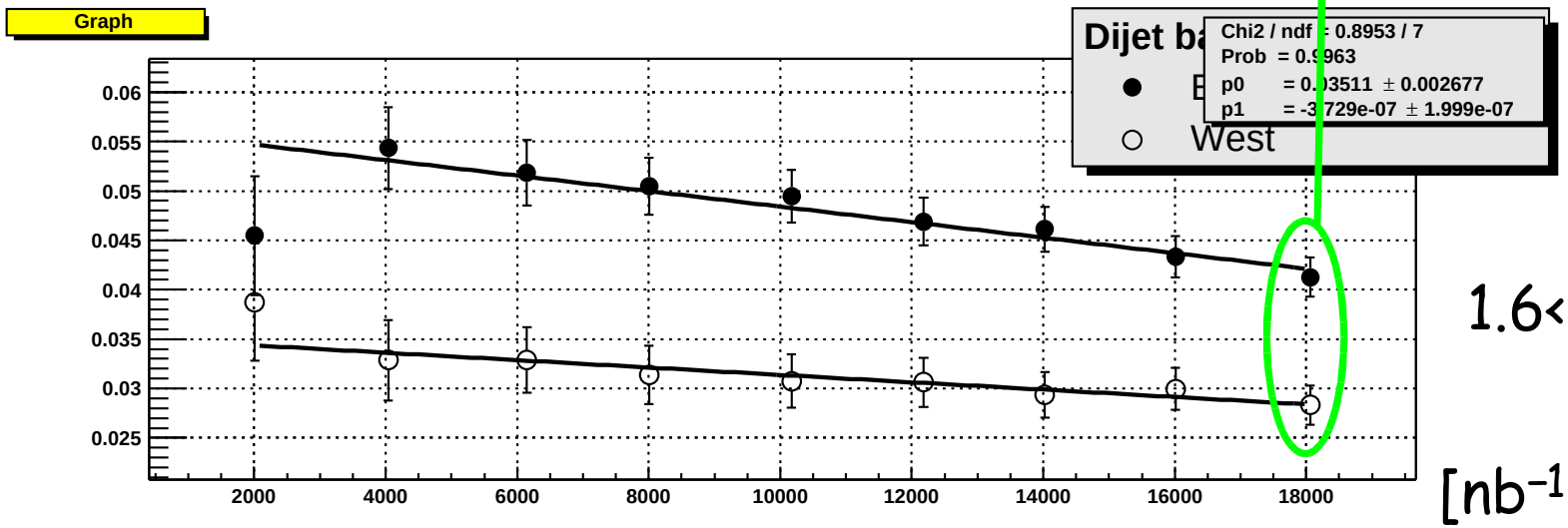
$[nb^{-1}]$

☞ east & west plugs don't significantly differ in high η region

Integral time dependence

E/W asymmetry decrease ...





$1.6<|\eta|<2.8$

$[nb^{-1}]$

Feb ~ 3% effect

Jun ~ 1% effect