NADA hot cells and jets

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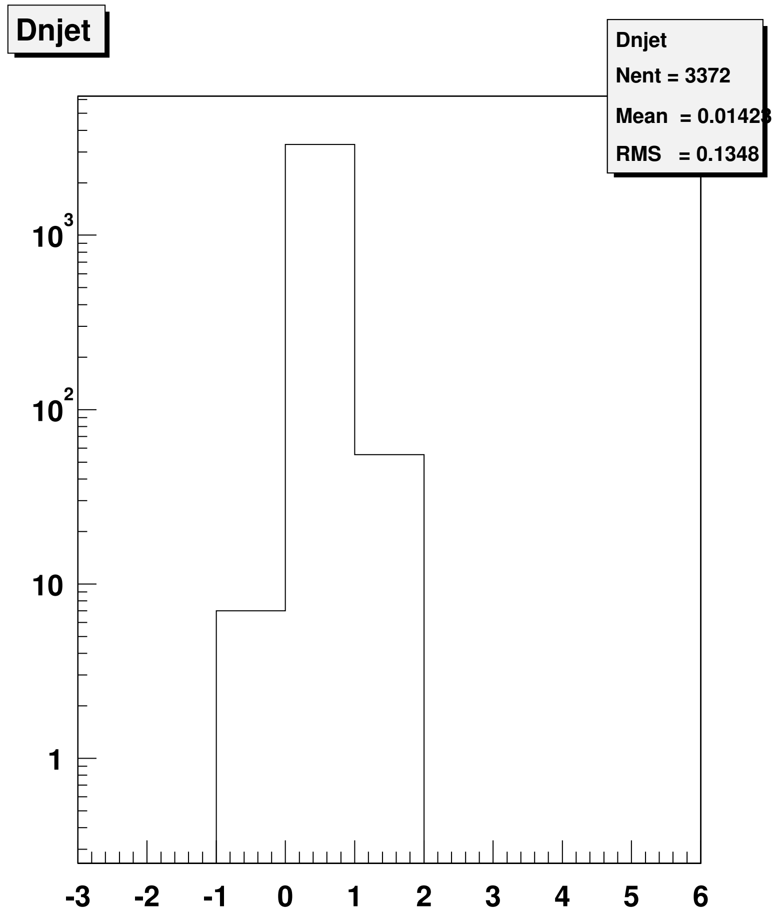
Data sample

- ▷ *data reconstructed with*
  - p10.08.01-*nada* (NADA *in killing mode*)
  - p10.08.01 (NADA *in shadow mode*)
- ▷ *small sample with exactly the same events for* NADA *running in killing mode and for* NADA *running in shadow mode*
- ▷ *only events that passed one of the jet triggers*
  - `JT_LO` (5 GeV *on* L1, 10 GeV *on* L3)
  - `JT_HI` (10 GeV *on* L1, 15 GeV *on* L3)
  - `CJT40` (40 GeV *on* L1)

Number of jets per event

$$Dnjet = N_{jet}^{shadow} - N_{jet}^{kill}$$

- total number of events 3372
- NADA removed 54 jets
- NADA created 7 jets
- the number of jets per event is different in 61 events which is about 1.8%



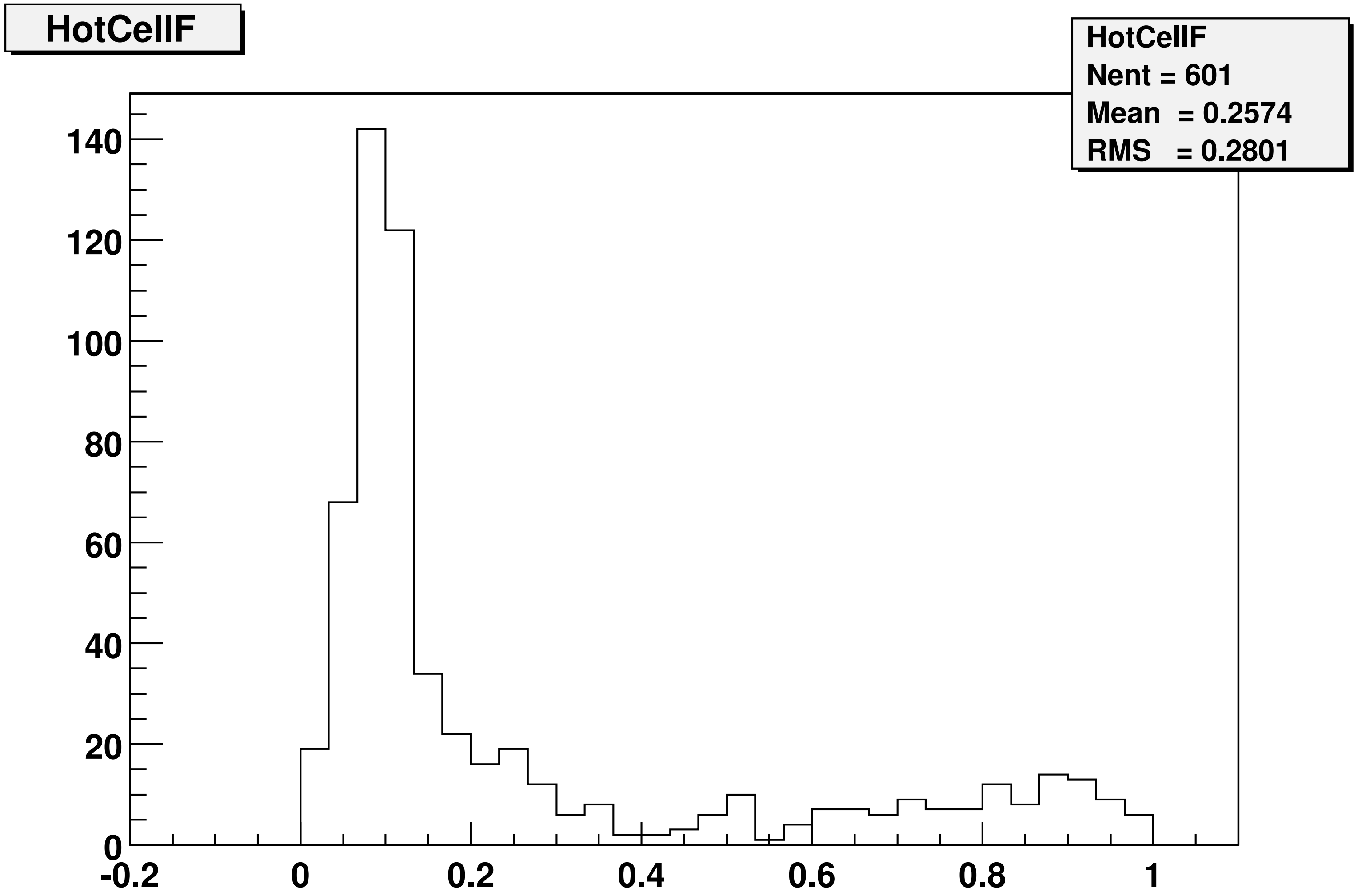
Hot jets

- p10.08.01 sample
- only jets with $|\eta| < 2.5$
- **'hot jet'** - jet with matched hot cell
  - simple geometric matching

Trigger	N_{jets}	N_{jets}^{hot}	N_{jets}^{hot}/N_{jets}
`JT_LO`	7015	289	4.1%
`JT_HI`	13773	204	1.4%
`CJT40`	2557	109	4.2%
total	23269	601	2.6%

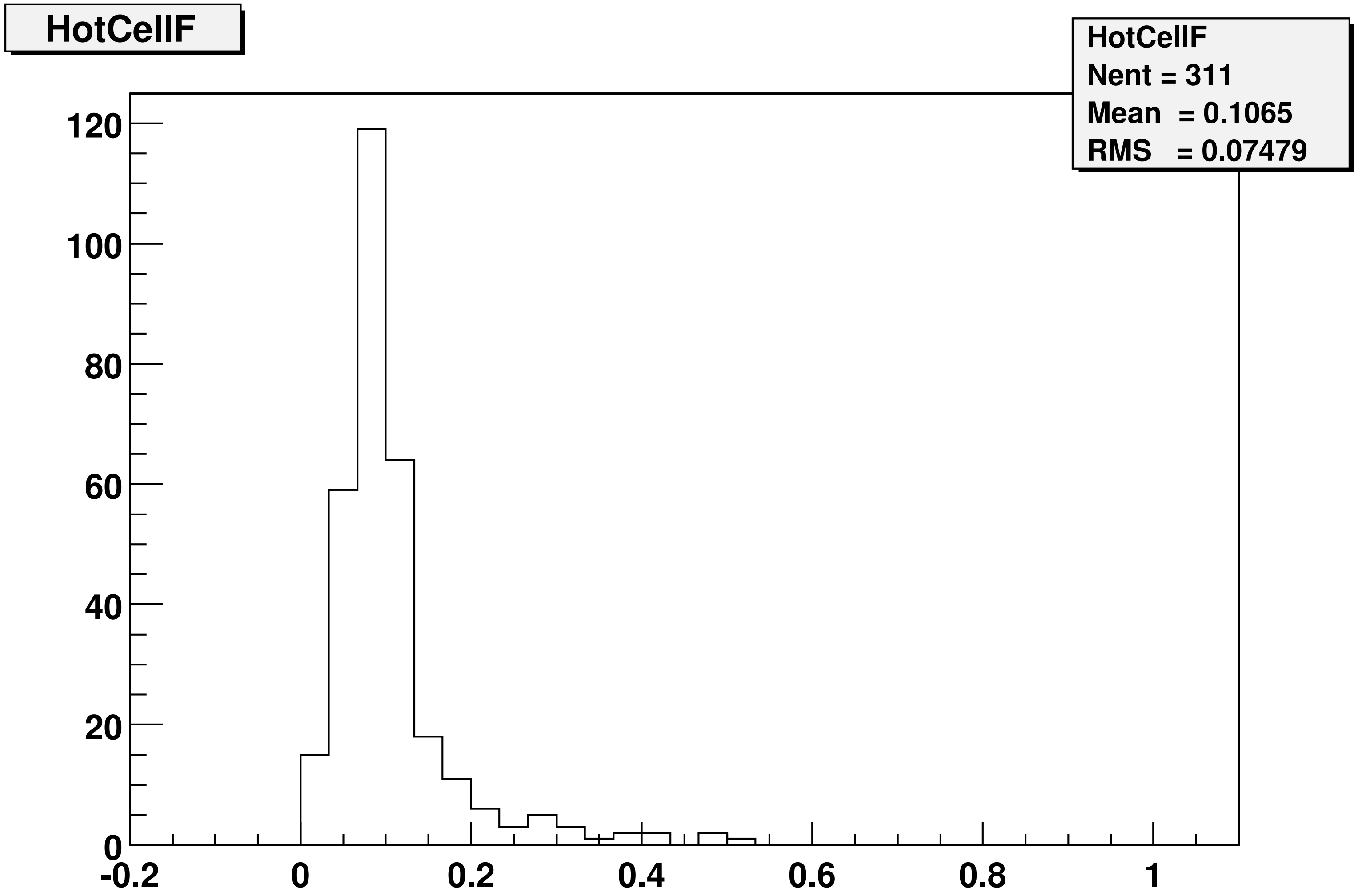
HotCellF in shadow mode

$$HotCellF = E_{hot\ cell}/E_{hot\ jet}$$

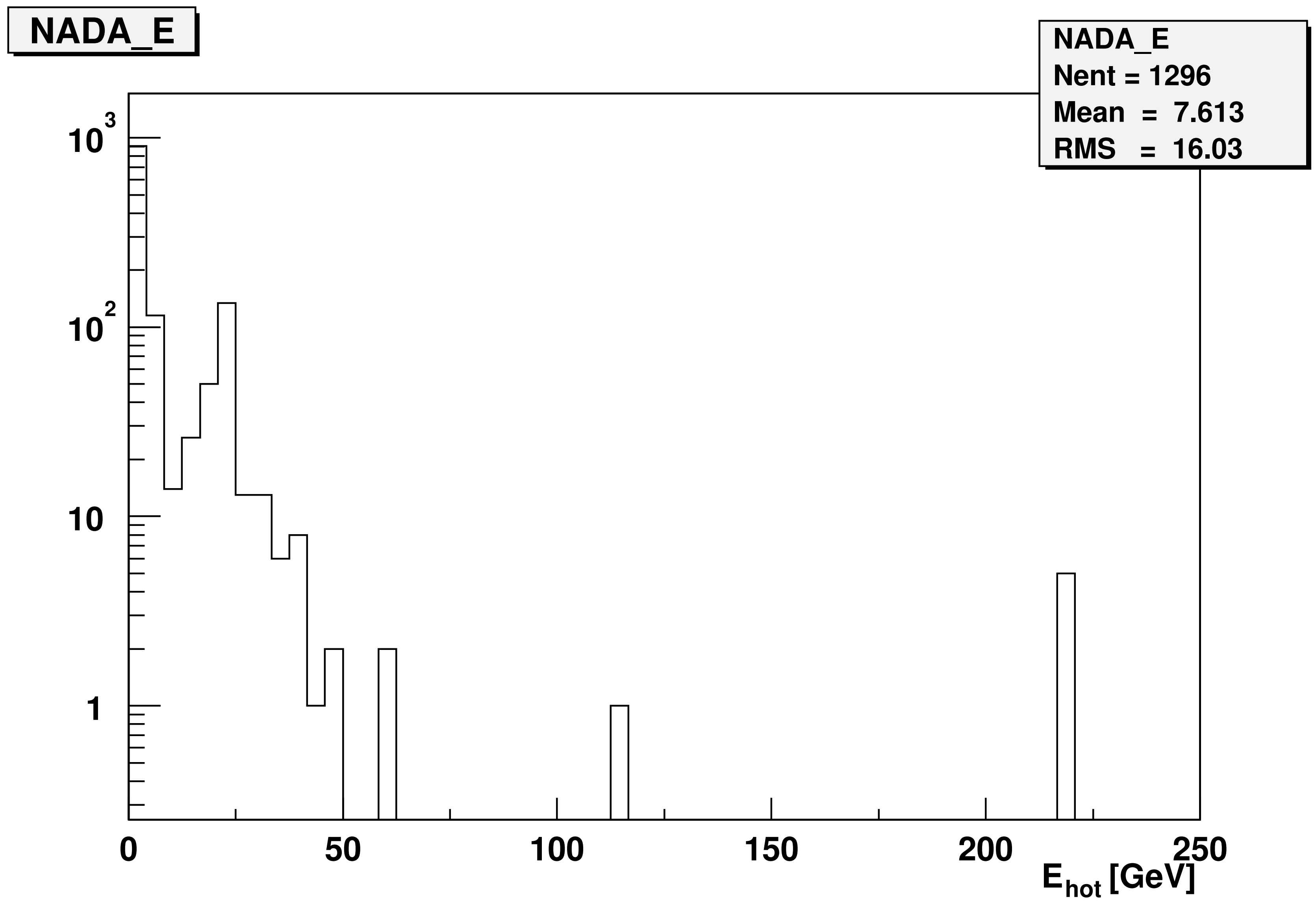


HotCellF in killing mode

$$HotCellF = E_{hot\ cell}/(E_{hot\ jet} + E_{hot\ cell})$$

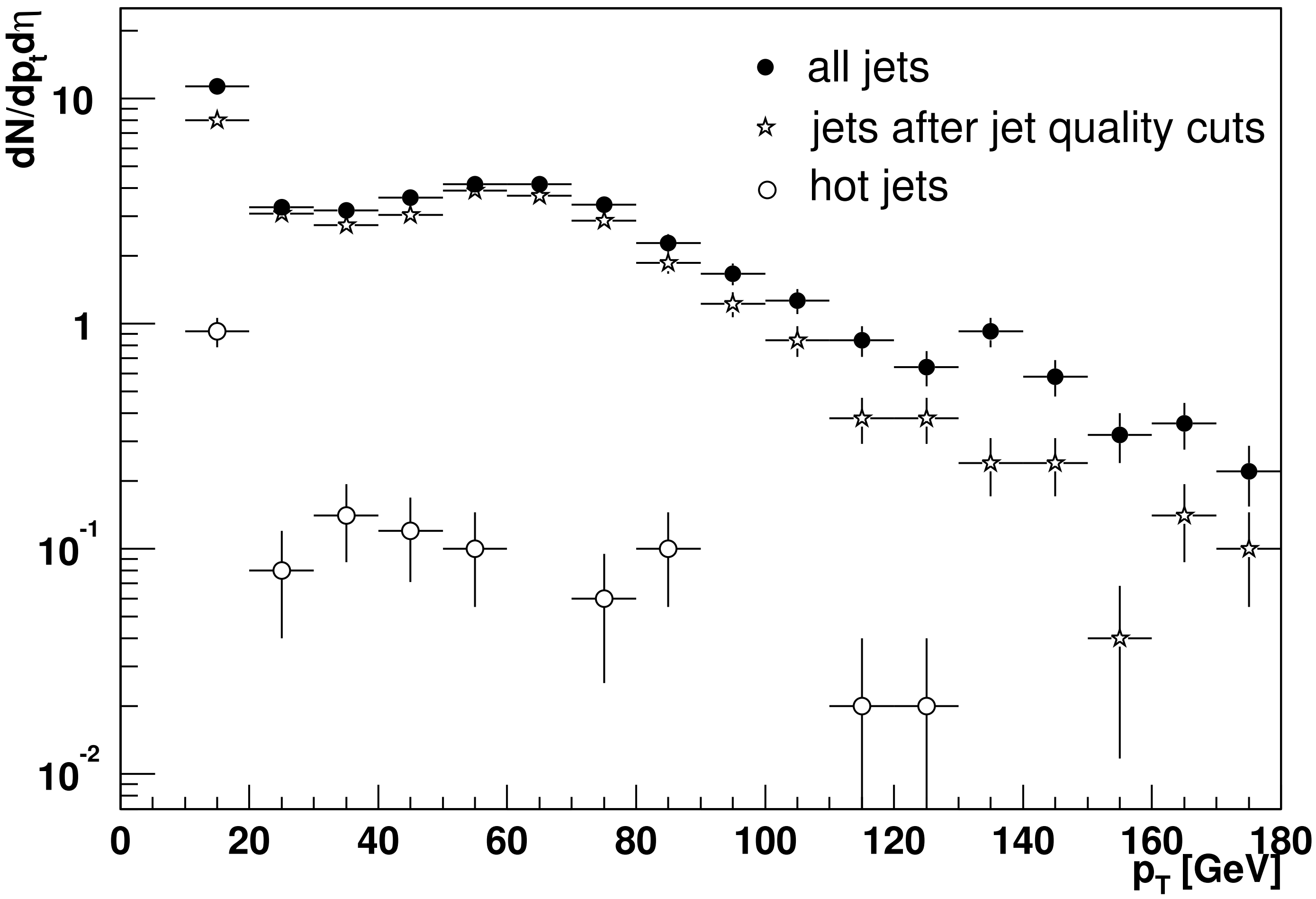


Energy spectrum of hot cells



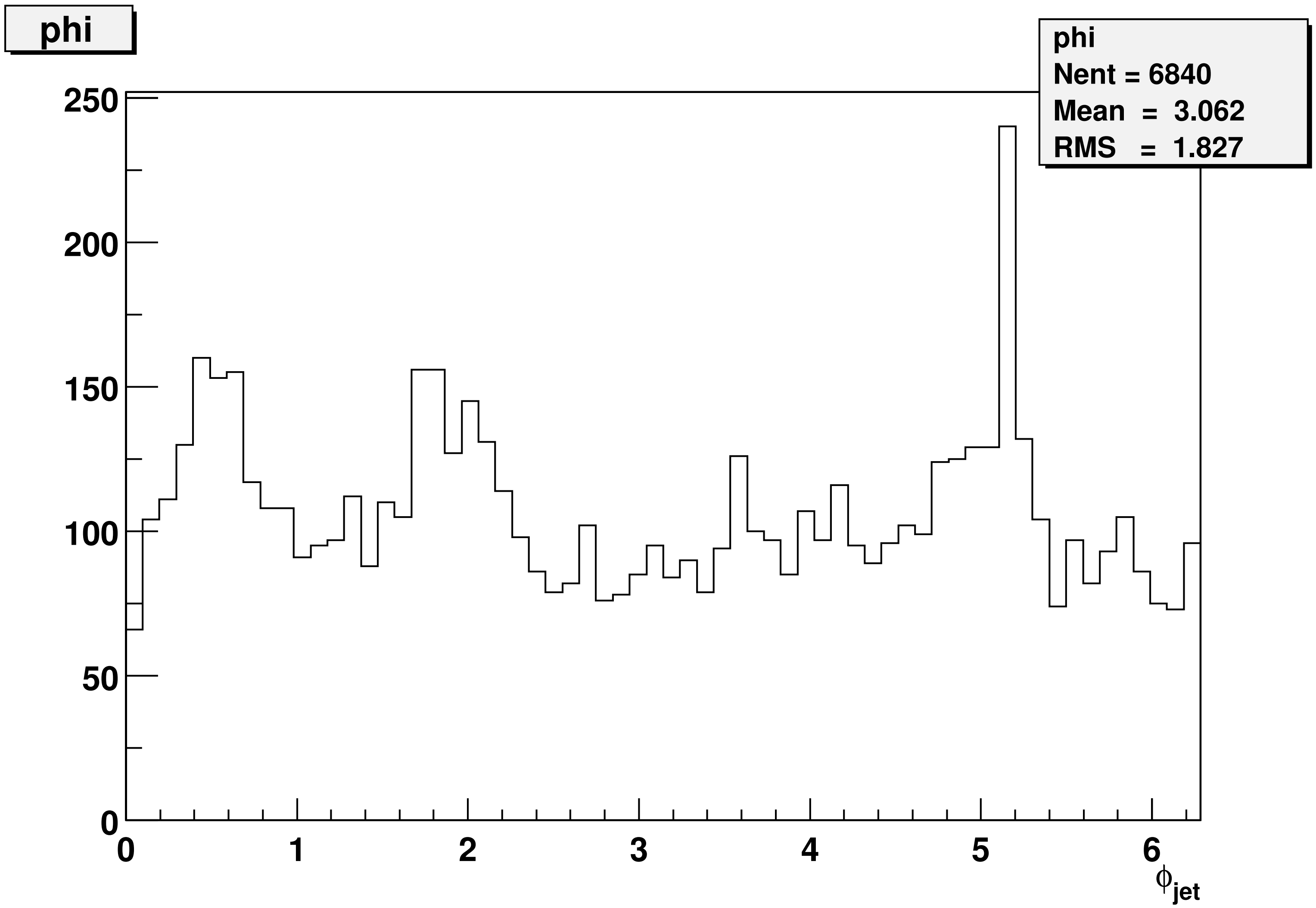
p_T spectrum of hot jets

▷ p10.08.01 sample (shadow mode) - CJT40 trigger



polar angle distribution

▷ p10.08.01-*nada sample (killing mode)* - `JT_HI` trigger



Summary

- ▷ NADA works fine - no strange behavior was observed
- ▷ hot cells identified by NADA affect only small fraction of jets
- ▷ jet quality cuts are more important for good identification of jets, NADA does not help that much