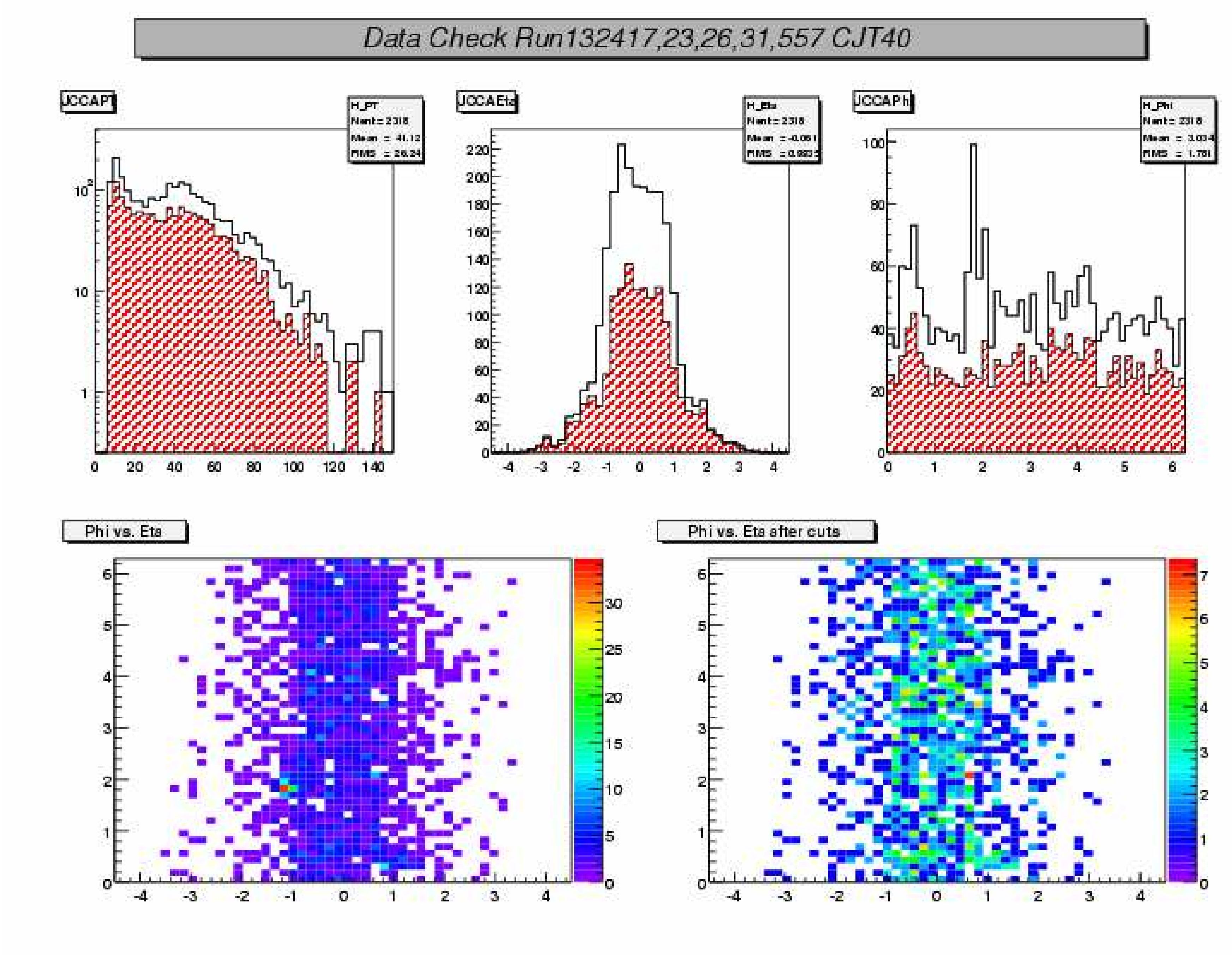
Data sample

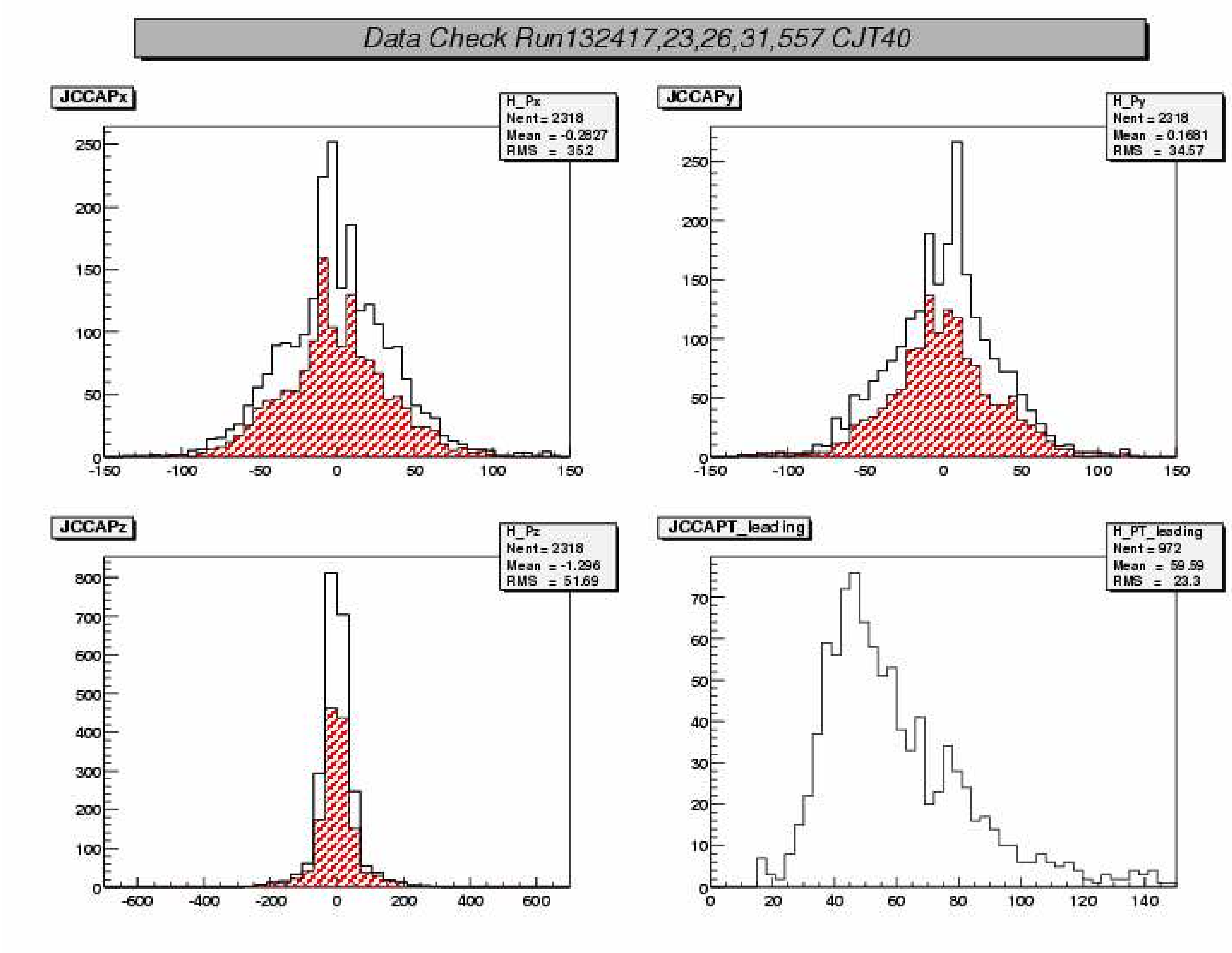
- Runs between Sep 28 and Sep 30
- the same version of trigger (1.4)
- the same L3 and L1 bits
- the same prescale factor for JT_HI trigger
- integrated luminosity DØ was exposed to

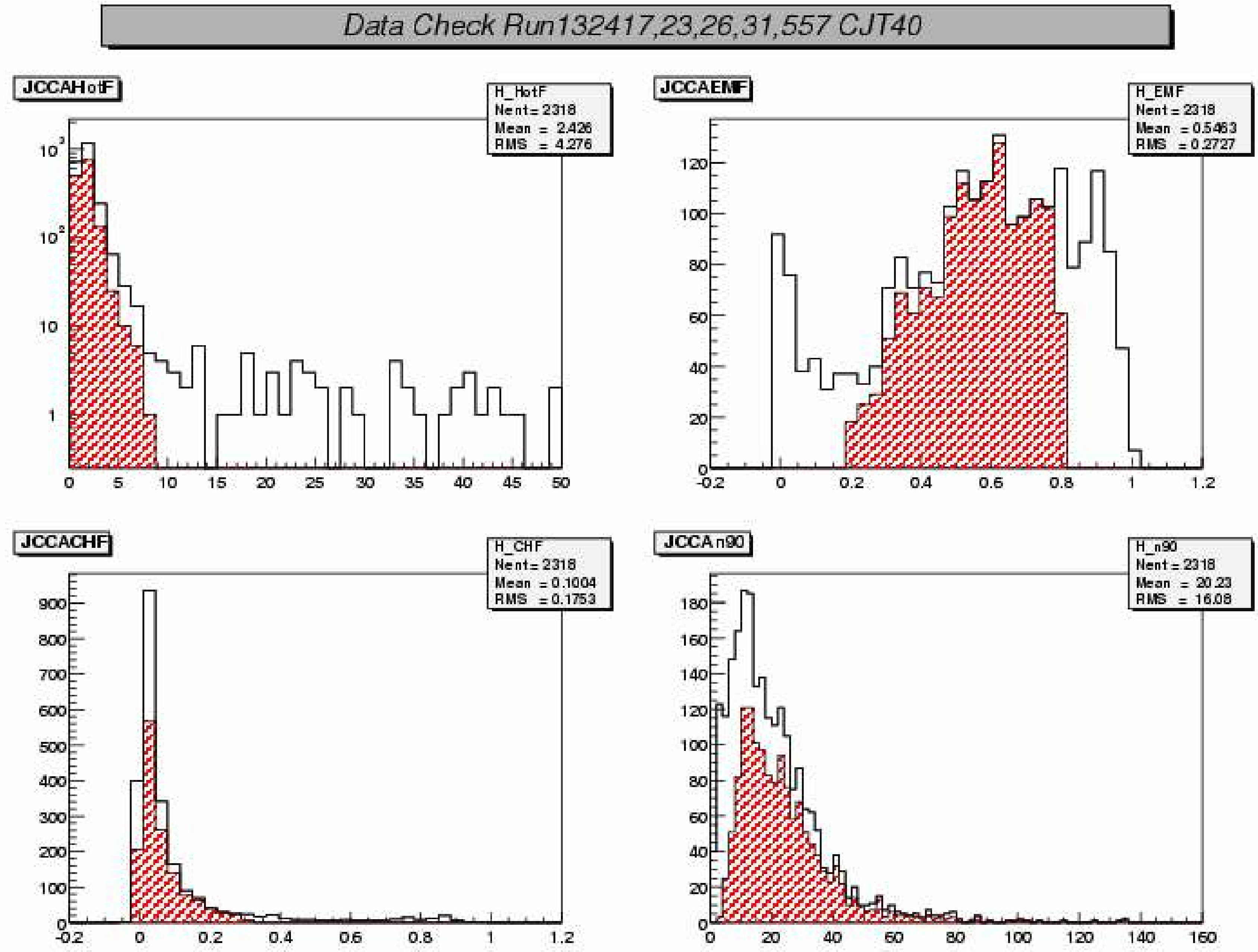
$$L_{int} \approx 150\,nb^{-1}$$

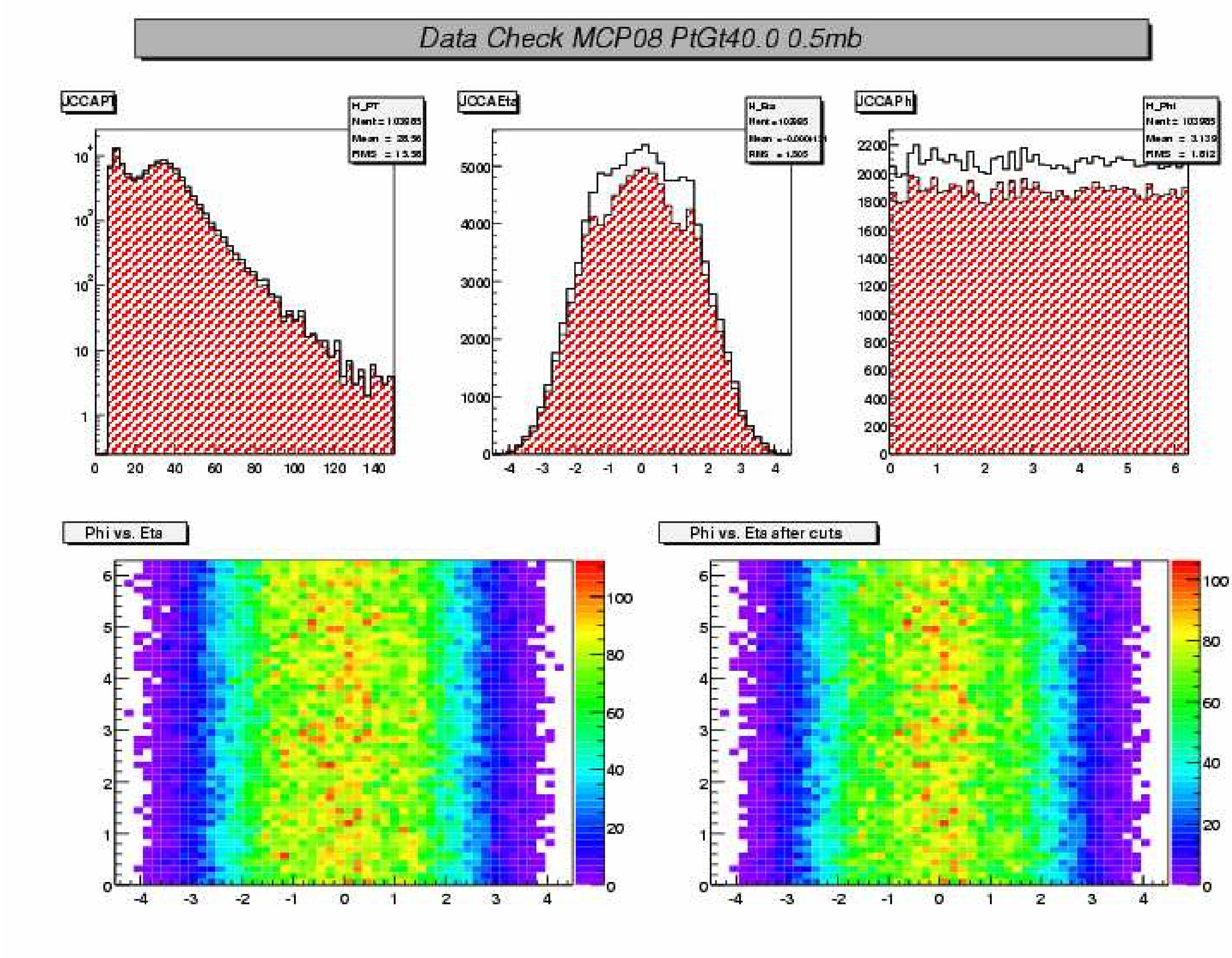
Quality cuts

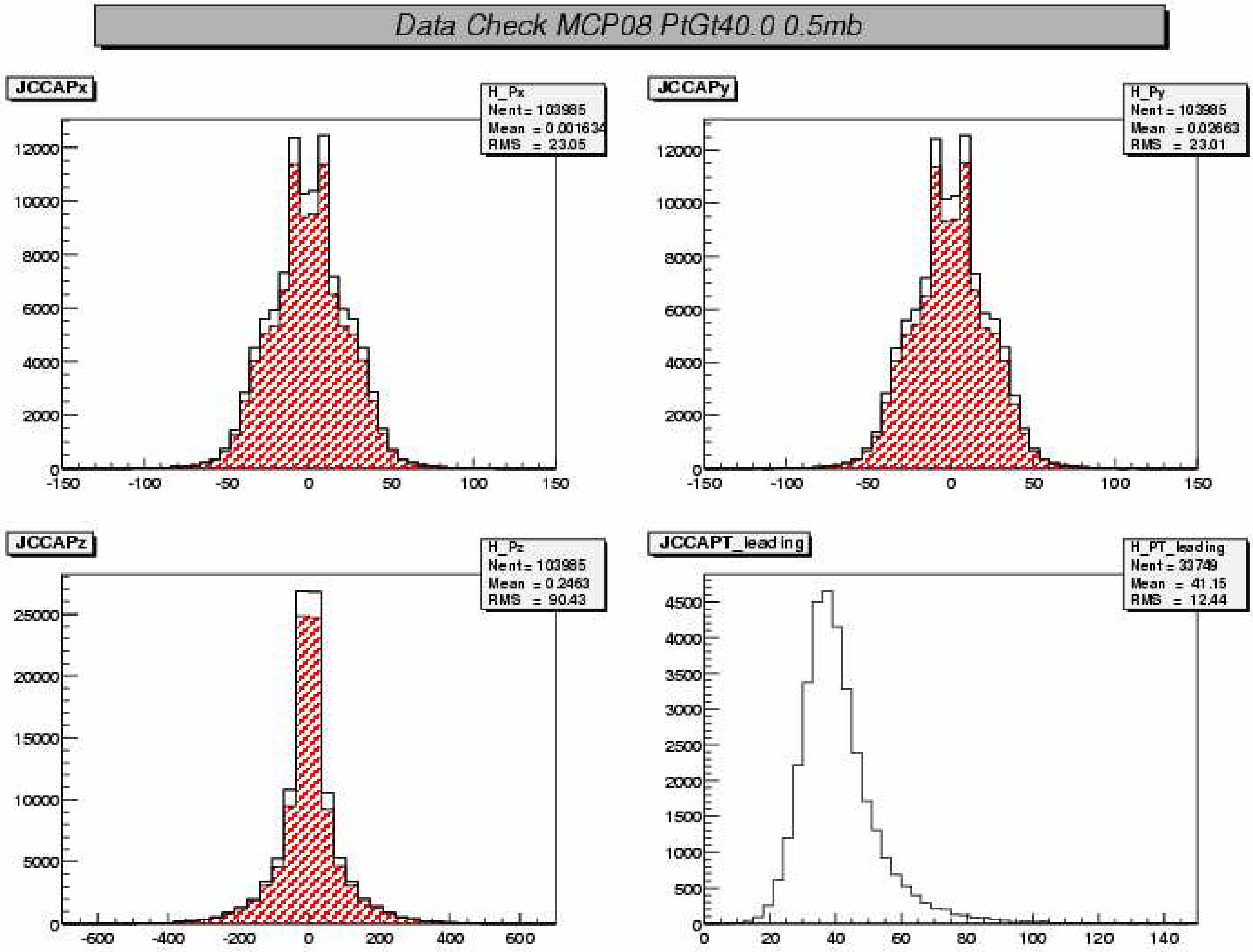
- Jet quality cuts
  - $HotF < 10$
  - $0.2 < EMF < 0.8$
  - $CHF < 0.3$
  - $n90 > 2$
- from MC the rejection factor of these cuts is about 10%


Data Check Run132417,23,26,31,557 CJT40
JCCAPT
H_PT
Nent = 2318
Mean = 41.12
RMS = 26.24
JCCAEta
H_Eta
Nent = 2318
JCCAPhi
H_Phi
Nent = 2318
Mean = 3.034
RMS = 1.781
Phi vs. Eta
Phi vs. Eta after cuts

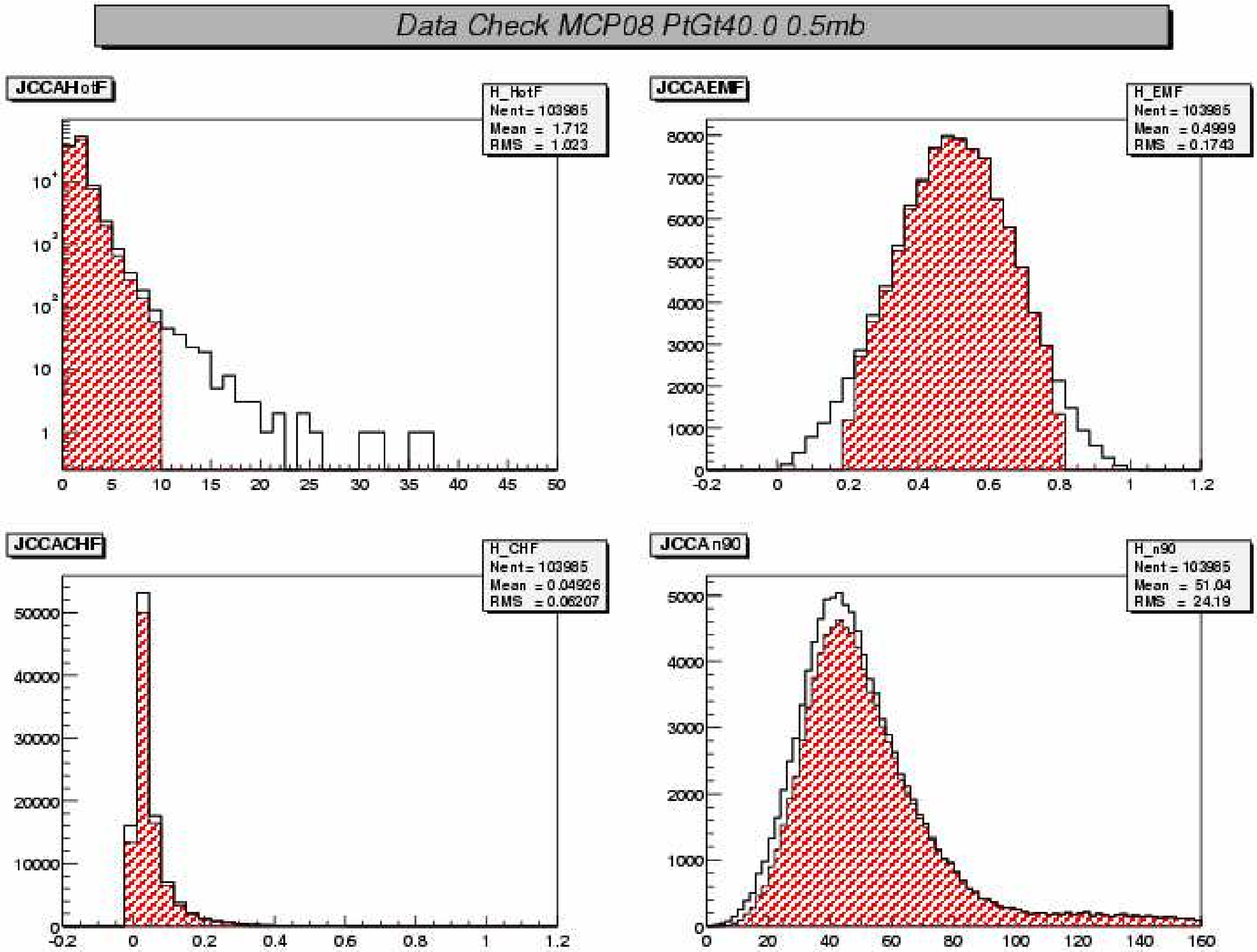

Data Check Run132417,23,26,31,557 CJT40
JCCAPx
H_Px
Nent = 2318
Mean = -0.2827
RMS = 35.2
JCCAPy
H_Py
Nent = 2318
Mean = 0.1681
RMS = 34.57
JCCAPz
H_Pz
Nent = 2318
Mean = -1.296
RMS = 51.69
JCCAPT_leading
H_PT_leading
Nent = 972
Mean = 59.59
RMS = 23.3

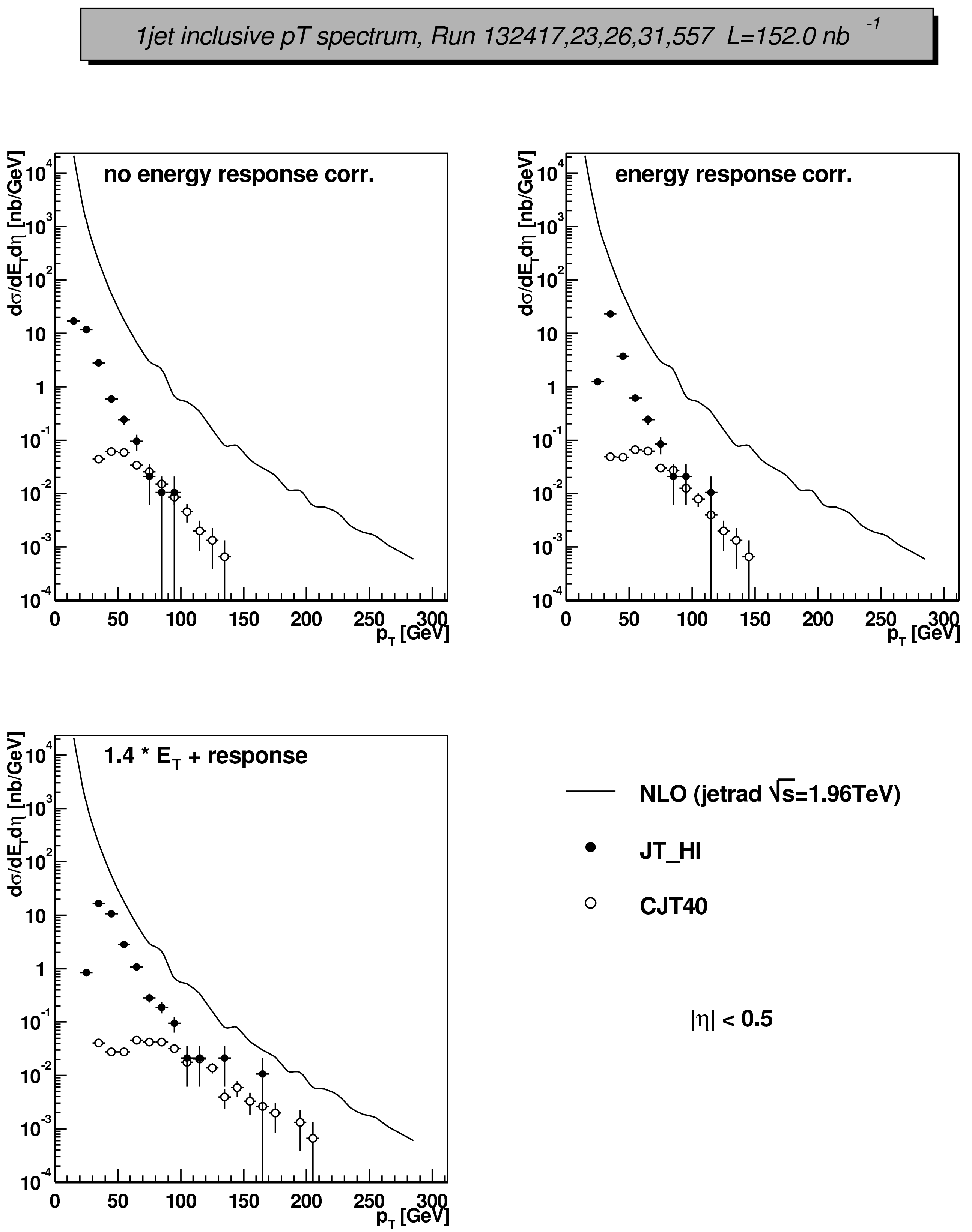

Data Check Run132417,23,26,31,557 CJT40
JCCAHotF
H_HotF
Nent = 2318
Mean = 2.426
RMS = 4.276
JCCAEMF
H_EMF
Nent = 2318
Mean = 0.5463
RMS = 0.2727
JCCACHF
H_CHF
Nent = 2318
Mean = 0.1004
RMS = 0.1753
JCCAn90
H_n90
Nent = 2318
Mean = 20.23
RMS = 16.08


Data Check MCP08 PtGt40.0 0.5mb
UCCAPt
UCCAEta
UCCAPhi
H_PT
H_Eta
H_Phi
Phi vs. Eta
Phi vs. Eta after cuts



Data Check MCP08 PtGt40.0 0.5mb
JCCAPx
H_Px
Nent = 103985
Mean = 0.001634
RMS = 23.05
JCCAPy
H_Py
Nent = 103985
Mean = 0.02663
RMS = 23.01
JCCAPz
H_Pz
Nent = 103985
Mean = 0.2463
RMS = 90.43
JCCAPT_leading
H_PT_leading
Nent = 33749
Mean = 41.15
RMS = 12.44


Data Check MCP08 PtGt40.0 0.5mb
JCCAHotF
H_HotF
Nent = 103985
Mean = 1.712
RMS = 1.023
JCCAEMF
H_EMF
Nent = 103985
Mean = 0.4999
RMS = 0.1743
JCCACHF
H_CHF
Nent = 103985
Mean = 0.04926
RMS = 0.06207
JCCAn90
H_n90
Nent = 103985
Mean = 51.04
RMS = 24.19


1jet inclusive pT spectrum, Run 132417,23,26,31,557 L=152.0 nb^-1
no energy response corr.
energy response corr.
1.4 * E_T + response
dσ/dE_T dη [nb/GeV]
p_T [GeV]
NLO (jetrad √s=1.96TeV)
JT_HI
CJT40
|η| < 0.5

Luminosity on L1

- Run 132417
- integrated luminosity DØ was exposed to

$$L_{int} \approx 52\,\mathrm{nb}^{-1}$$

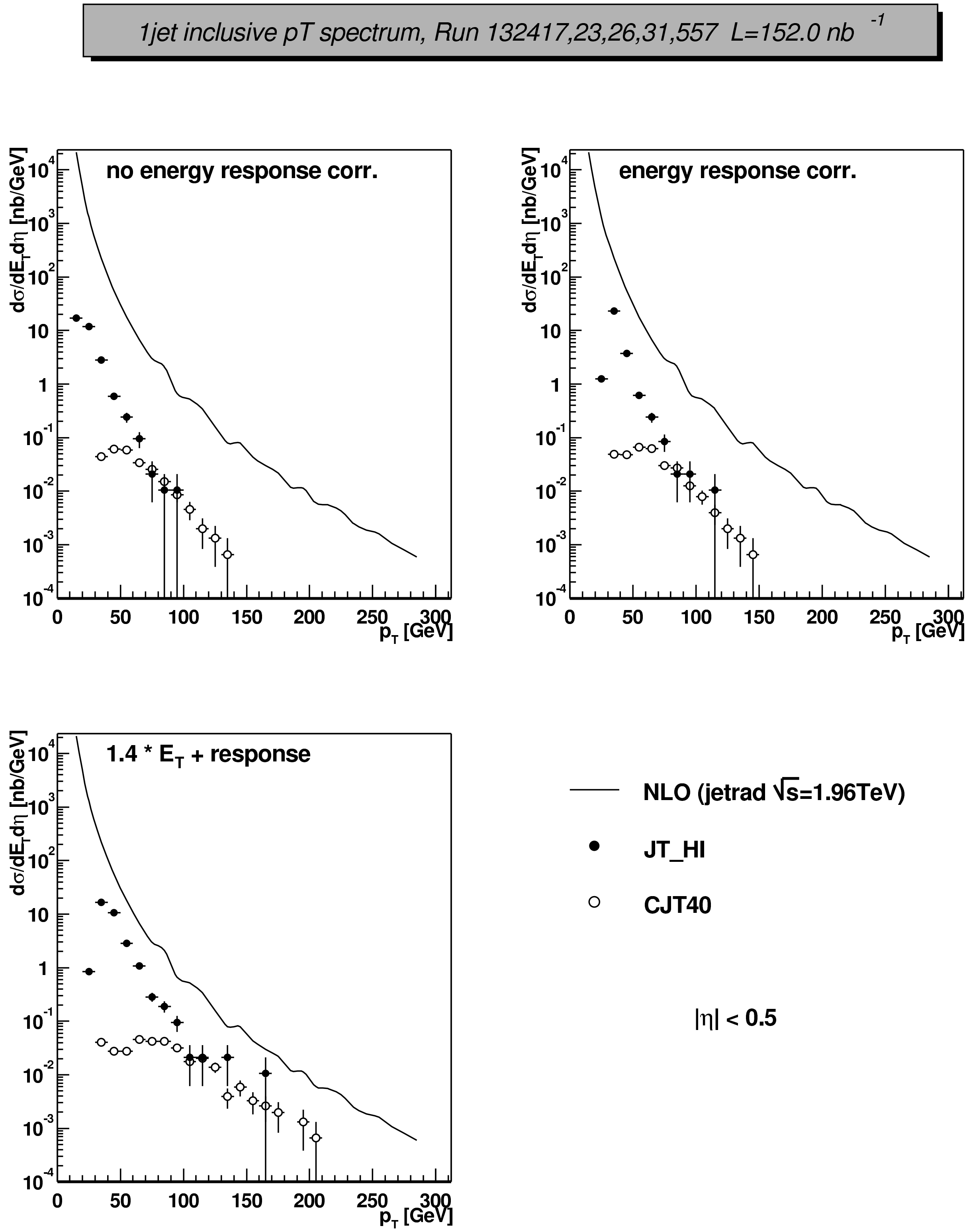
- number of stored events $N_{stored} = 51603$
- number of reconstructed events $N_{reco} = 51603$
- luminosity for each luminosity block and for each L1 trigger calculated by Michael Begel
- package `lm_access` used to access the luminosity information in the data analysis

```
emacs@kozel-clued0.fnal.gov
Buffers Files Tools Edit Search Mule Help
LBN: 583020
        Date:           Fri Sep 28 17:53:44 2001
        Delta Time:     60.07 seconds
        LBN Reason:     0x1      ['60 sec Timer']
        Status:         0x0      ['Good Luminosity']
        Store:          727
        CDF Lum:        5.64e+00 ub-1
        D0 Lum:         6.60e+00 ub-1
        Exposed to Beam:
          2: 6.60e+00 ub-1
          1: 3.61e+00 ub-1
          0: 6.54e+00 ub-1
        Runs:    [132417]
           0/-1/-1: 1.12e-05 ub-1
           1/ 1/ 1: 3.76e-06 ub-1       (Afastz | min_bias)
           2/ 2/ 2: 9.51e-08 ub-1       (ALiveBX | zero_bias)
           3/ 3/ 3: 3.10e-06 ub-1       (CEM(1,5)_dup | CEM5)
           4/ 4/ 4: 4.42e-01 ub-1       (CEM(1,5) | EM_LO)
           5/ 5/ 5: 1.24e-01 ub-1       (CEM(1,em5eta8phi3) | CEM5eta8phi3)
           6/ 6/ 6: 3.09e-06 ub-1       (CEM(1,10)_dup | CEM10)
           7/ 7/ 7: 3.09e+00 ub-1       (CEM(1,10) | EM_HI)
           8/ 8/ 8: 3.09e+00 ub-1       (CEM(1,20) | CEM20)
           9/ 9/ 9: 3.08e-06 ub-1       (CJT(1,5)_dup | CJT5)
          10/10/10: 4.42e-02 ub-1       (CJT(1,5) | JT_LO)
          11/11/11: 1.55e+00 ub-1       (CJT(1,jt10eta8phi3) | CJT10eta8phi3)
          12/12/12: 3.11e-06 ub-1       (CJT(1,10)_dup | CJT10)
          13/13/13: 1.93e-01 ub-1       (CJT(1,10) | JT_HI)
          14/14/14: 3.09e+00 ub-1       (CJT(1,40) | CJT40)
          15/15/15: 2.21e-02 ub-1       (mu1cmsc_fz | mu1cmsc_fz)
          16/16/16: 5.07e-02 ub-1       (mu1pix_fz | mu1pix_fz)
          17/17/17: 3.09e+00 ub-1       (mu1cmsc_j5_fz | mu1cmsc_j5_fz)
          18/18/18: 3.09e+00 ub-1       (mu1cmsc_j10_fz | mu1cmsc_j10_fz)
          19/19/19: 3.09e+00 ub-1       (mu1cmsc_j10m_fz | mu1cmsc_j10m_fz)
          20/20/20: 3.09e+00 ub-1       (mu2pix_fz | mu2pix_fz)
          21/21/21: 3.09e+00 ub-1       (mu2cmsc_fz | mu2cmsc_fz)
          22/22/22: 3.09e+00 ub-1       (mu2all_fz | mu2all_fz)
          23/23/23: 3.09e-01 ub-1       (CEM(2,5) | 2CEM5)
          24/24/24: 3.09e+00 ub-1       (CEM(2,10) | L1Zee)
          25/25/25: 3.09e+00 ub-1       (CEM(1,em5CFT_LBX) | CEM5CFT_LBX)
          26/26/26: 3.09e+00 ub-1       (CJT(1,jt10CFT_LBX) | CJT10CFT_LBX)


LBN: 583021
        Date:           Fri Sep 28 17:54:44 2001
        Delta Time:     60.04 seconds
        LBN Reason:     0x1      ['60 sec Timer']
        Status:         0x400    ['Odd Prescales']
        Store:          727
        CDF Lum:        5.71e+00 ub-1
        D0 Lum:         6.62e+00 ub-1
        Exposed to Beam:
          2: 6.62e+00 ub-1
          1: 3.60e+00 ub-1
          0: 6.55e+00 ub-1
        Runs:    [132417]

--:--  lumblk_132417.txt    7:33PM 1.00    (Text)--L876--14%--------------------
```

emacs@kozel-clued0.fnal.gov
Buffers Files Tools Edit Search Mule C++ Help
#ifndef LIBD0_LUMBLKMAP_H
#define LIBD0_LUMBLKMAP_H
#include <libD0/LumBlkInfo.h>
#include <map>
#include <iostream>
using namespace std;
class LumBlkMap : public map<int, LumBlkInfo>{
public:
LumBlkMap();
LumBlkMap(const LumBlkMap& rhs);
virtual ~LumBlkMap() {};
void read(istream& s);
// void read(istream& s, LumBlkStatus StatusMask);
int has(int LumID) const;
double total_luminosity() const;
};
#endif /* LIBD0_LUMBLKMAP_H */
-1:-- LumBlkMap.h 5:24PM 0.05 (C++)--L20--All--------------------------
#ifndef LIBD0_LUMBLKINFO_H
#define LIBD0_LUMBLKINFO_H
#include <libD0/LumBlkStatus.h>
struct LumBlkInfo{
float luminosity;
LumBlkStatus status;
};
#endif /* LIBD0_LUMBLKINFO_H */
-1:-- LumBlkInfo.h 5:24PM 0.05 (C++)--L11--All--------------------------
#ifndef LIBD0_LUMBLKSTATUS
#define LIBD0_LUMBLKSTATUS
typedef int LumBlkStatus;
#endif /* LIBD0_LUMBLKSTATUS */
--:-- LumBlkStatus.h 5:24PM 0.05 (C++)--L1--All--------------------------
Wrote /home/kupco/work/D0/lumblk/libD0/LumBlkMap.h


1jet inclusive pT spectrum, Run 132417,23,26,31,557 L=152.0 nb $^{-1}$
no energy response corr.
energy response corr.
1.4 * E_T + response
$d\sigma/dE_T d\eta$ [nb/GeV]
p_T [GeV]
NLO (jetrad $\sqrt{s}$=1.96TeV)
JT_HI
CJT40
$|\eta| < 0.5$