CT / DCCT ratio during MR Run40~42

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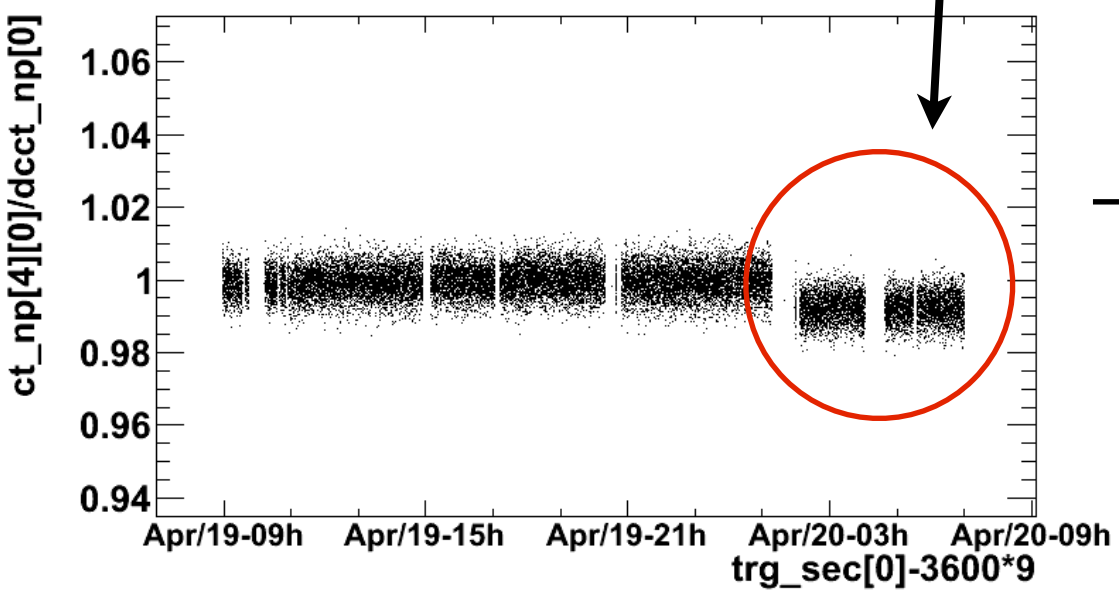
- Calc the each CT / DCCT by using beam data in MR Run40~42 physics run.
  - We can calc this ratio for other run period, but take more and more time to process.
  - Tentatively, I calc the physics run data in MR Run40~42

Bug

At beam pre-meeting in last collabo, I found the ratio of CT5/DCCT changed in a halfway of physics run.

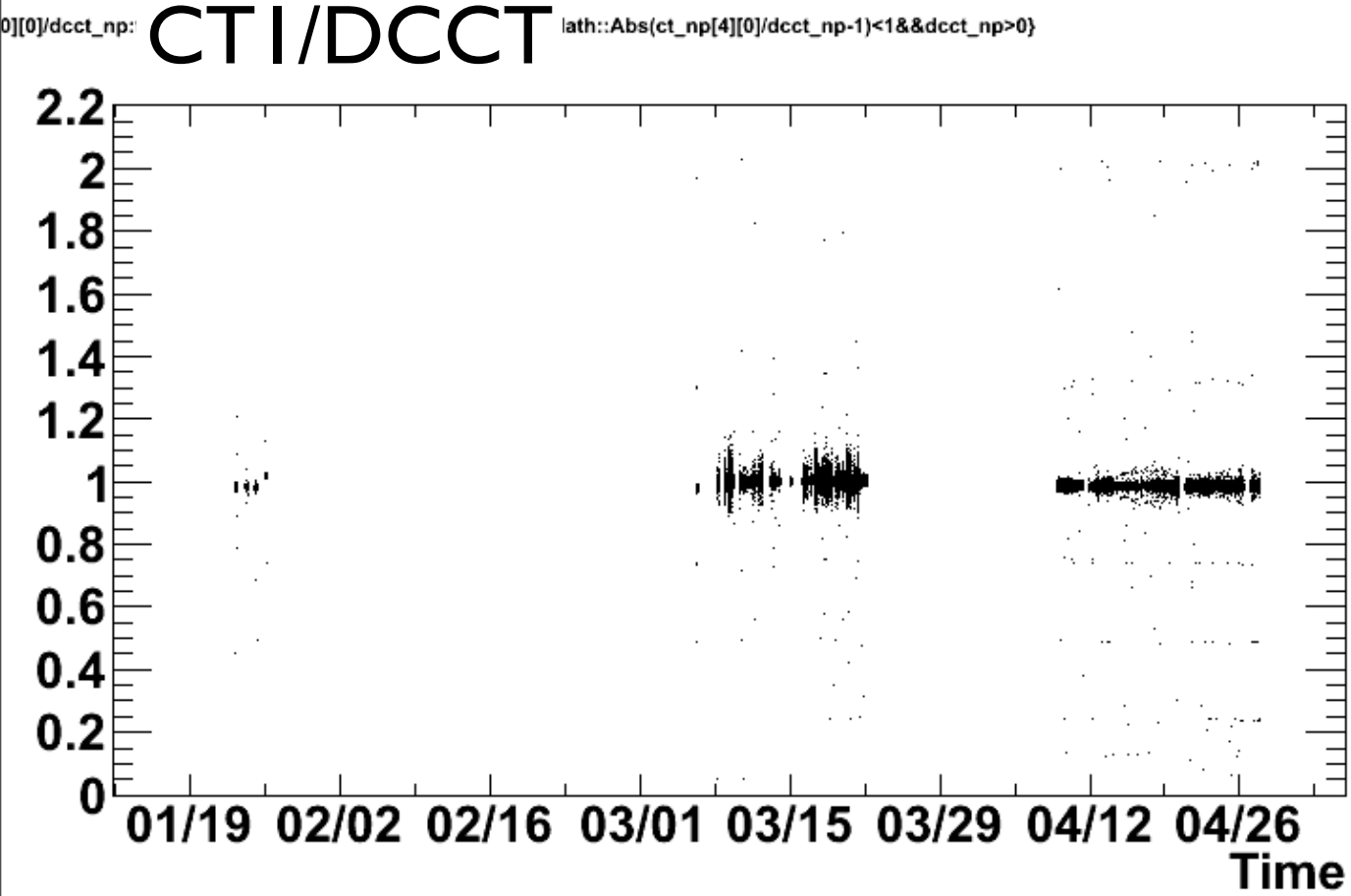
Proton per pulse ratio of CT05/DCCT

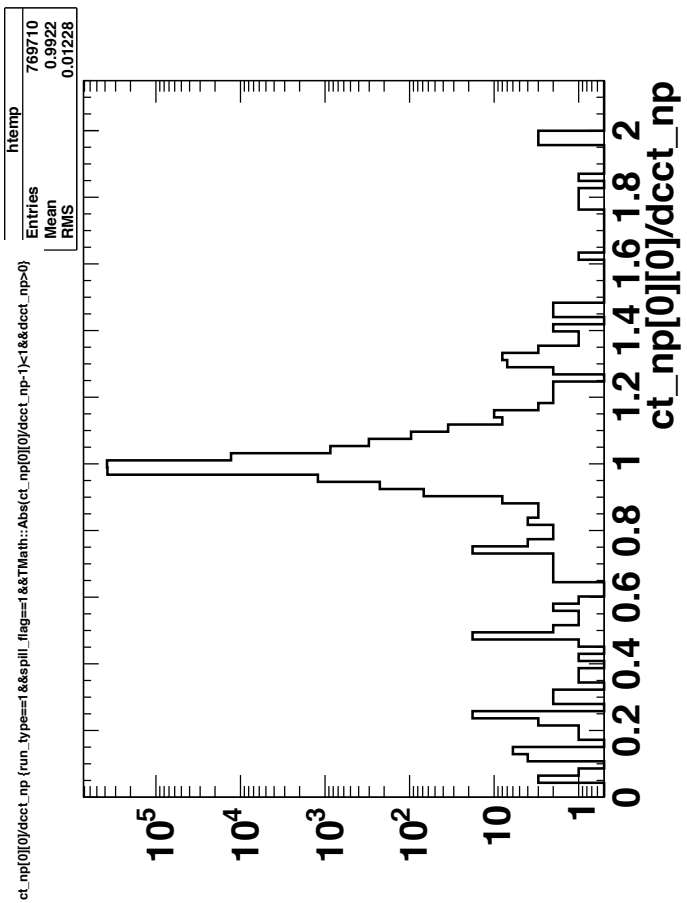


This "DCCT" is not DCCT
→ This is "MRCT" (different from "DCCT")

After bug fix, the CT5/DCCT ratio become to be stable (not change halfway)

CT1/DCCT

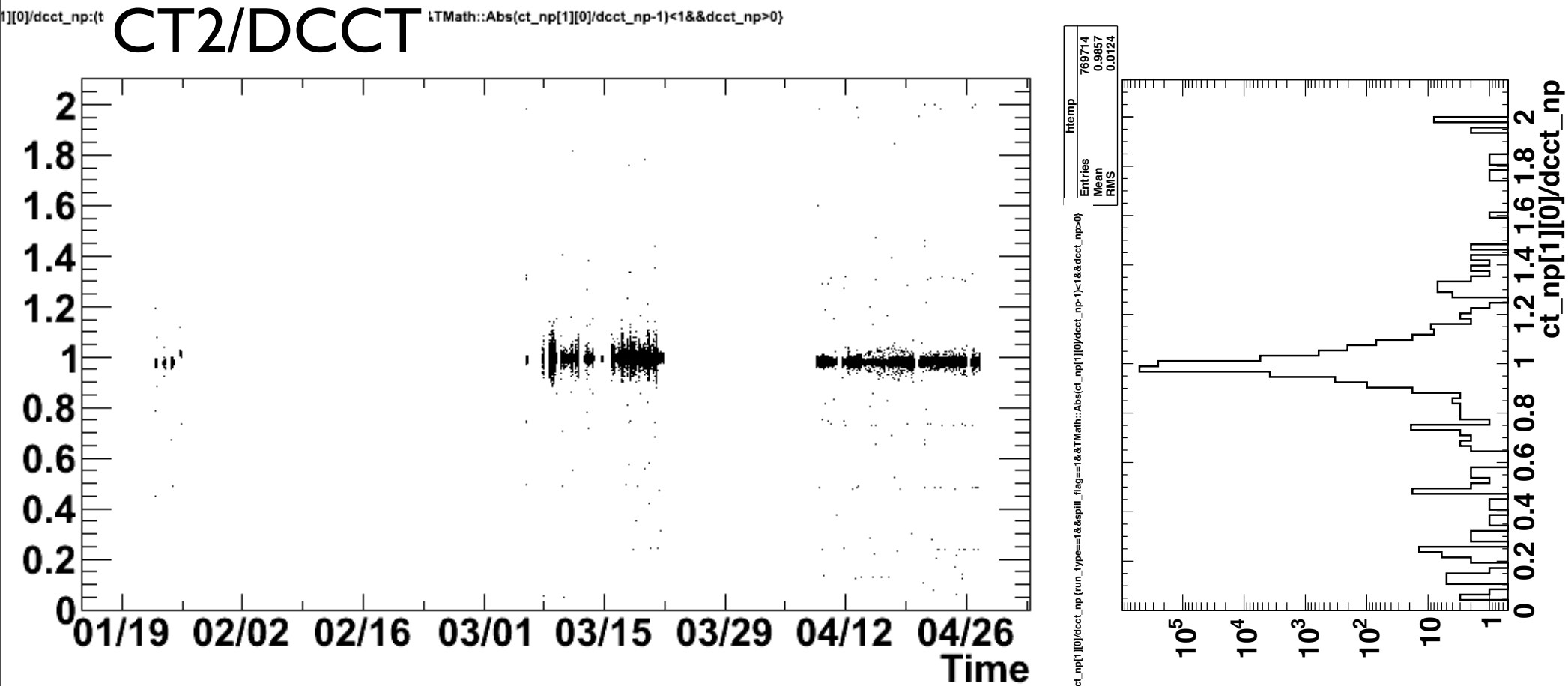




Mean=0.992, RMS=0.0123

RMS/Mean=1.24%

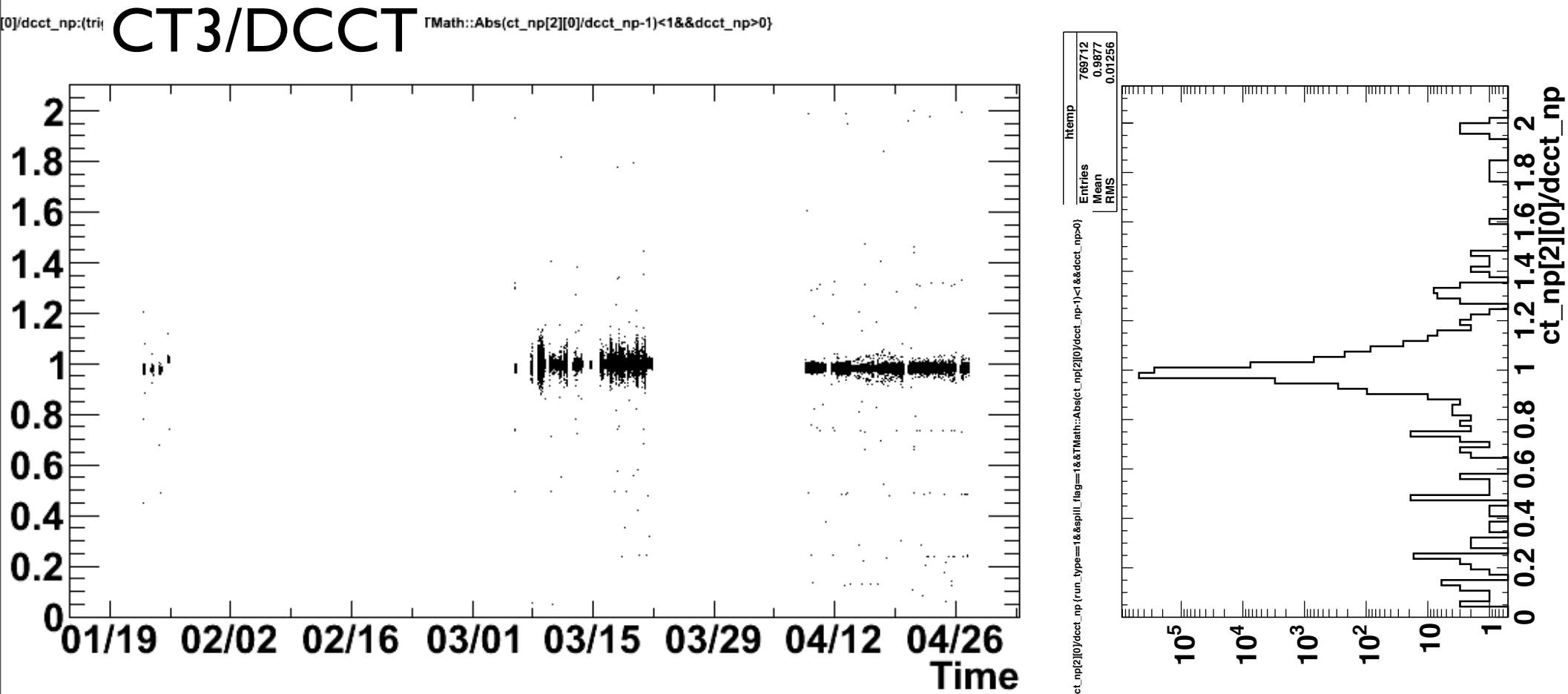
CT2/DCCT



Mean=0.986, RMS=0.0124

RMS/Mean=1.26%

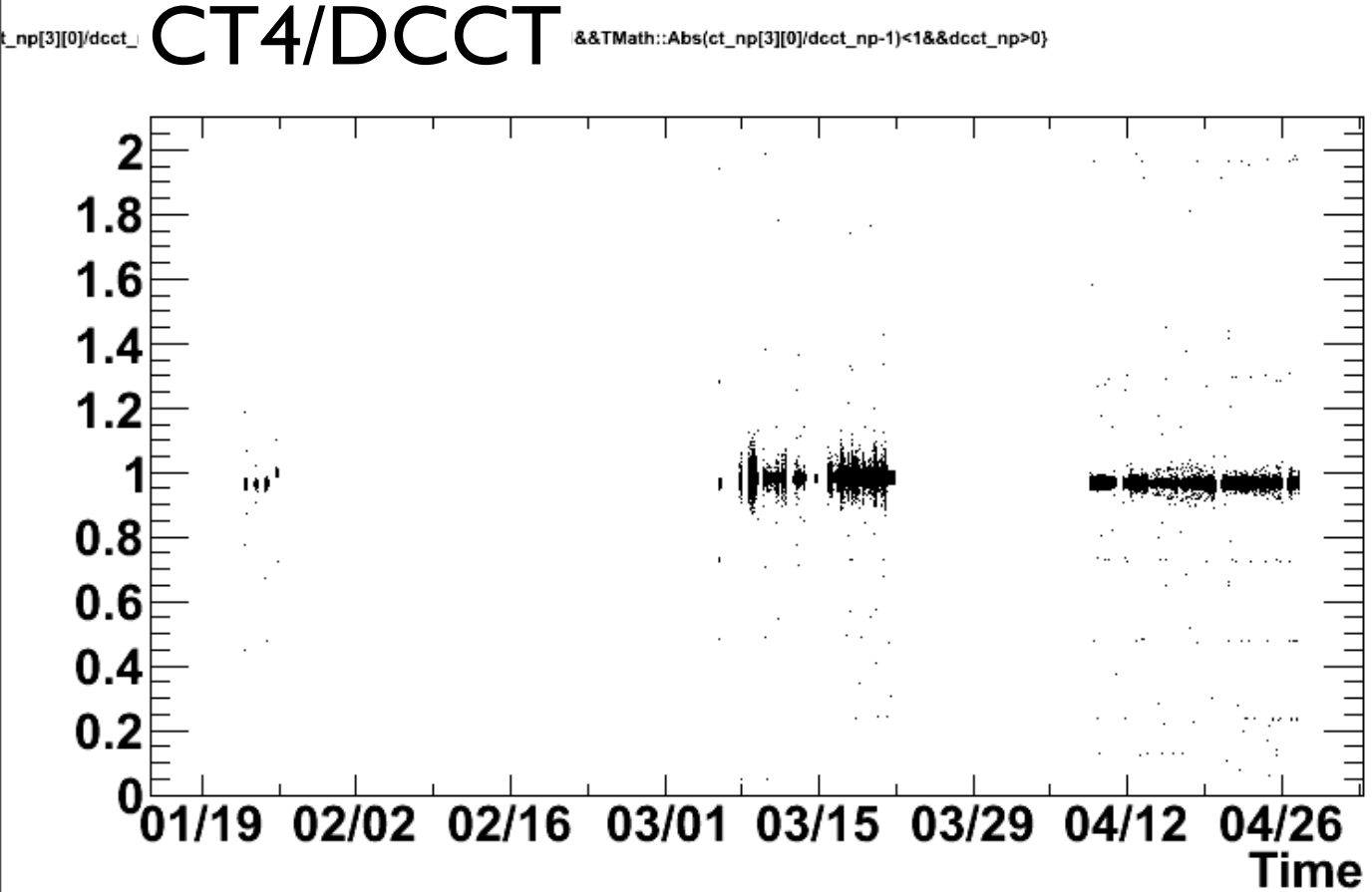
CT3/DCCT

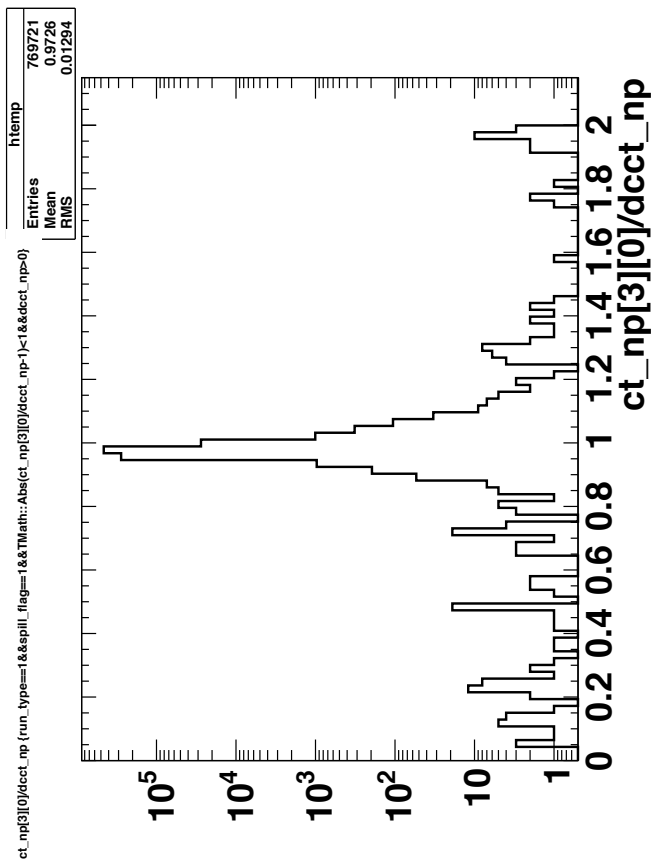


Mean=0.988, RMS=0.0126

RMS/Mean=1.28%

CT4/DCCT

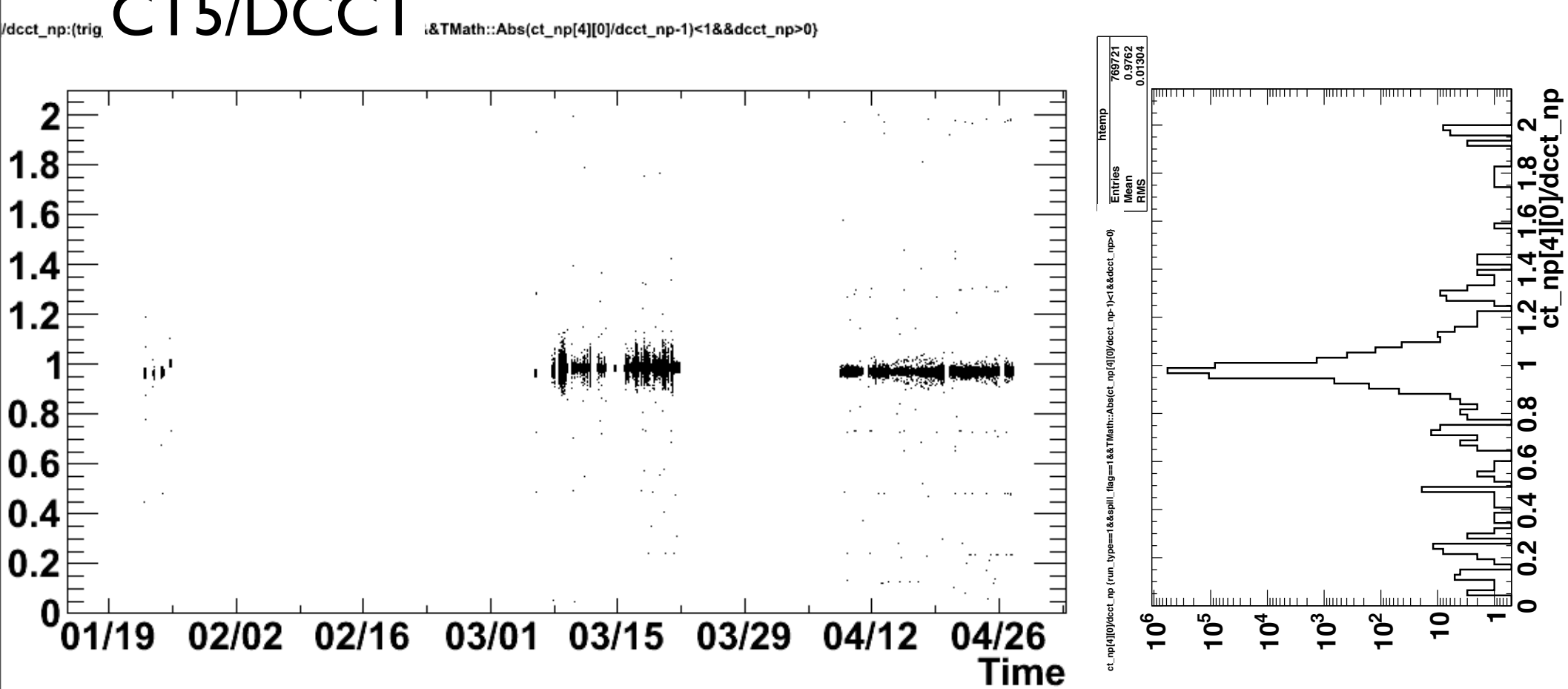




Mean=0.973, RMS=0.0129

RMS/Mean=1.33%

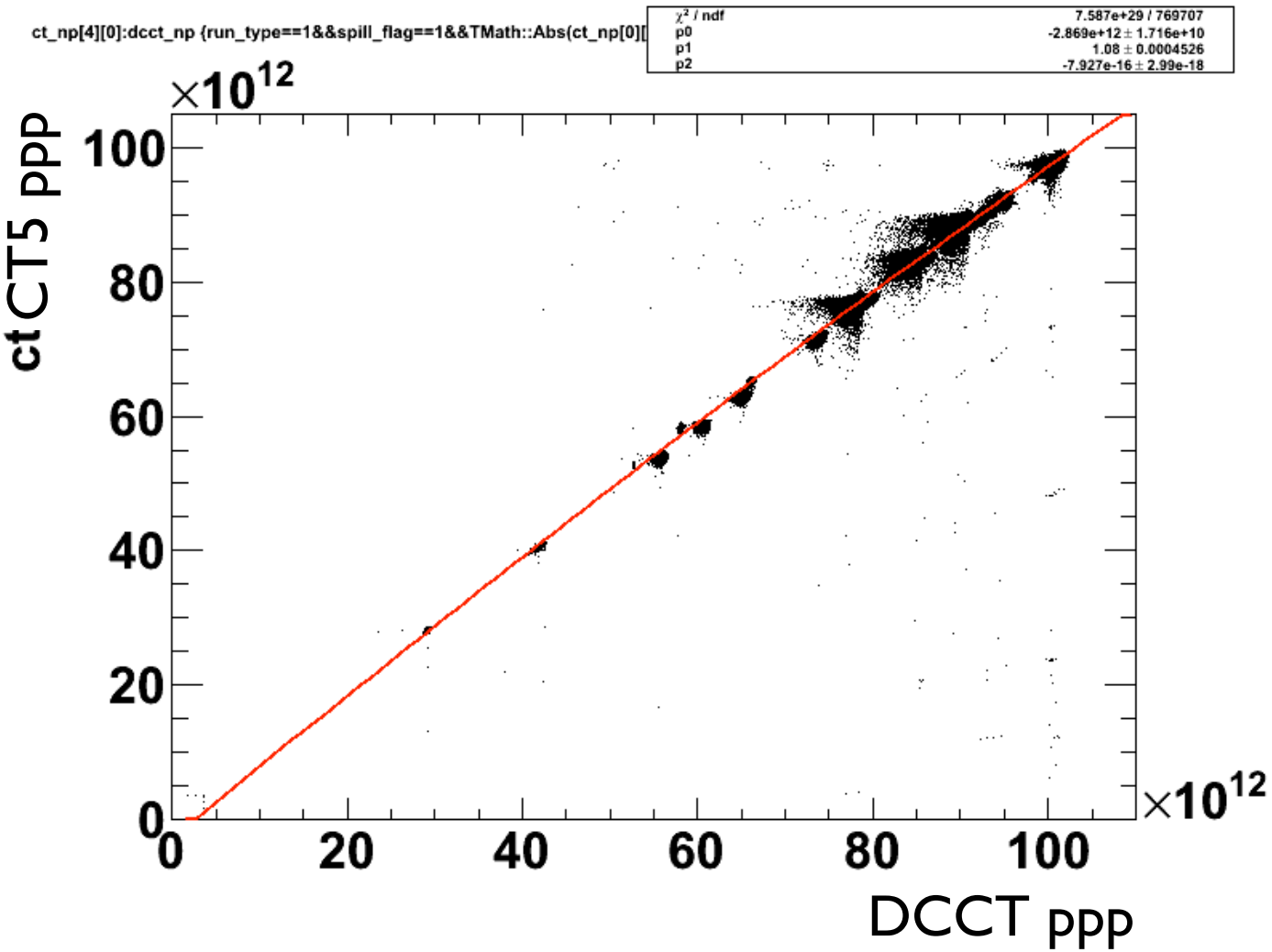
CT5/DCCT



Mean=0.976, RMS=0.0130

RMS/Mean=1.33%

CT5 vs DCCT



Check the response of CT5 to beam intensity (assuming the response of DCCT is correct)

fit by quadratic function → almost linear correlation

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Chi2                      =  7.58694e+29
NDf                       =         769707
p0                        = -2.86856e+12   +/-   1.71616e+10
p1                        =      1.08022   +/-   0.000452603
p2                        = -7.92733e-16   +/-   2.99032e-18
```

Summary table

	CT1/ DCCT	CT2/ DCCT	CT3/ DCCT	CT4/ DCCT	CT5/ DCCT
Mean	0.992	0.986	0.988	0.973	0.976
RMS	0.0123	0.0124	0.0126	0.0129	0.0130
RMS/Mean [%]	1.24	1.26	1.28	1.33	1.33