

ACC

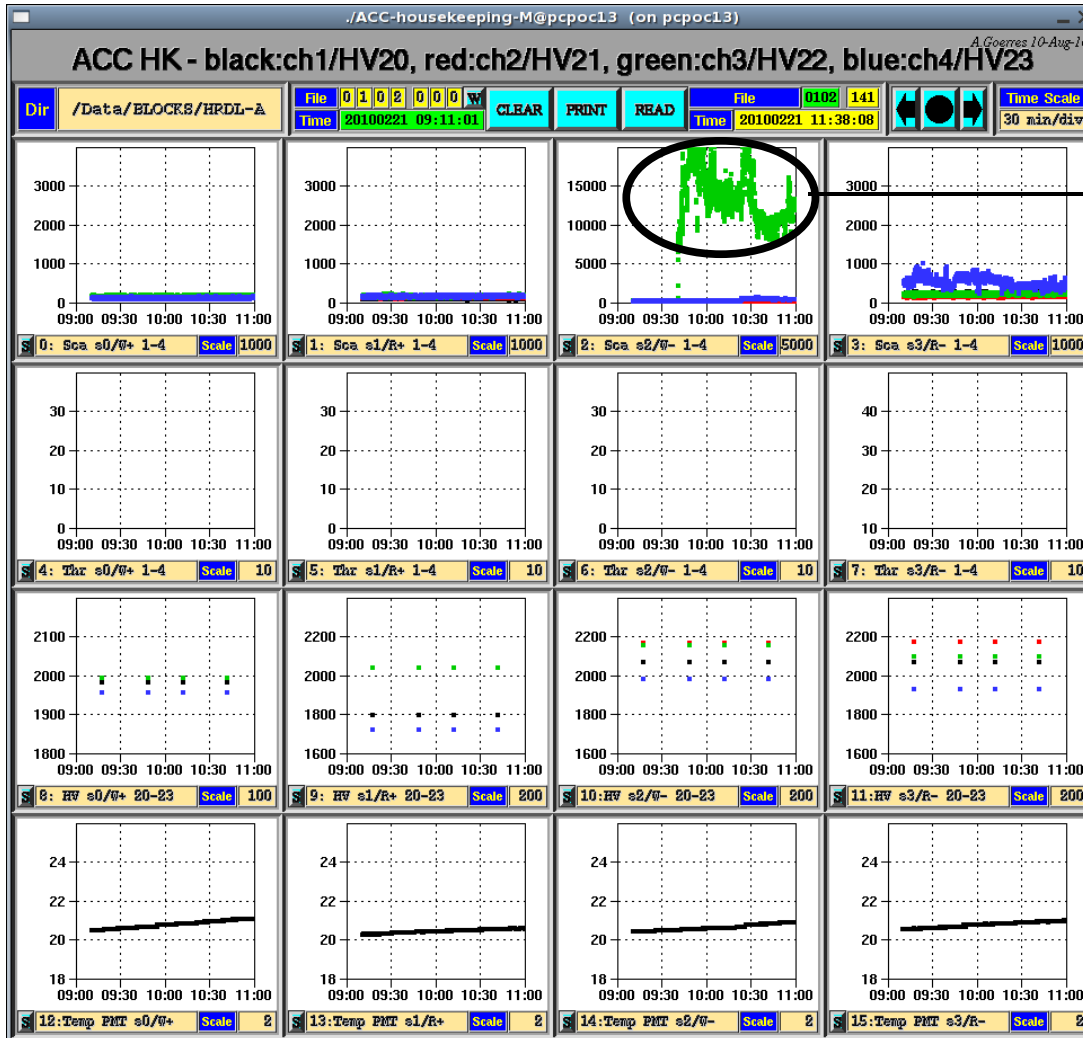
André Goerres

On behalf of ACC group

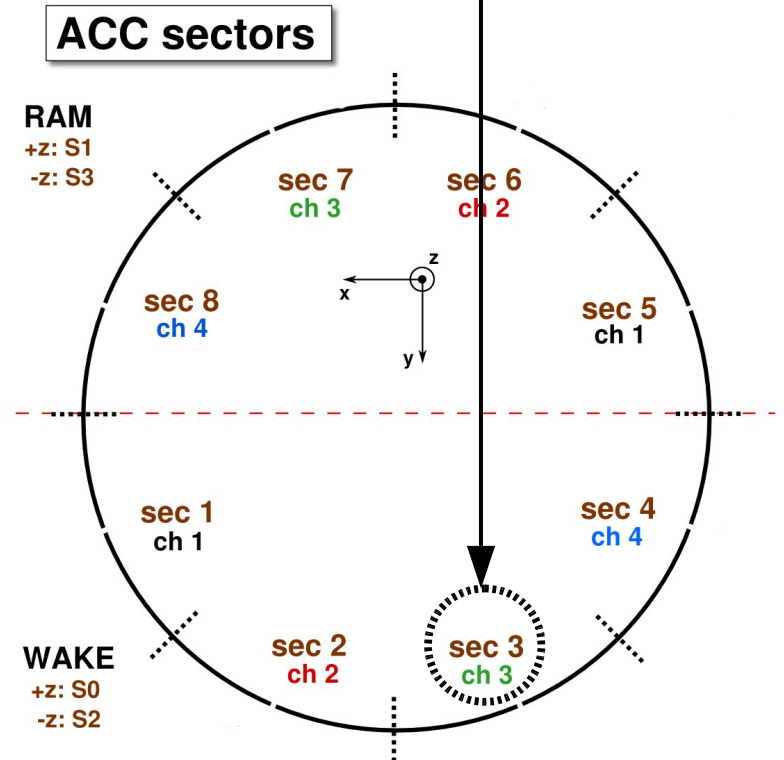
RWTH Aachen University

ACC after flight integration with SC-magnet

- PMT on S-crate 2, ch2 (sector 3: **Green** color) showed very high scaler-rates
 - (~10,000 instead of ~400) since EMI test at ESTEC



Swap with a new PMT(FS) during reintegration w/ PM



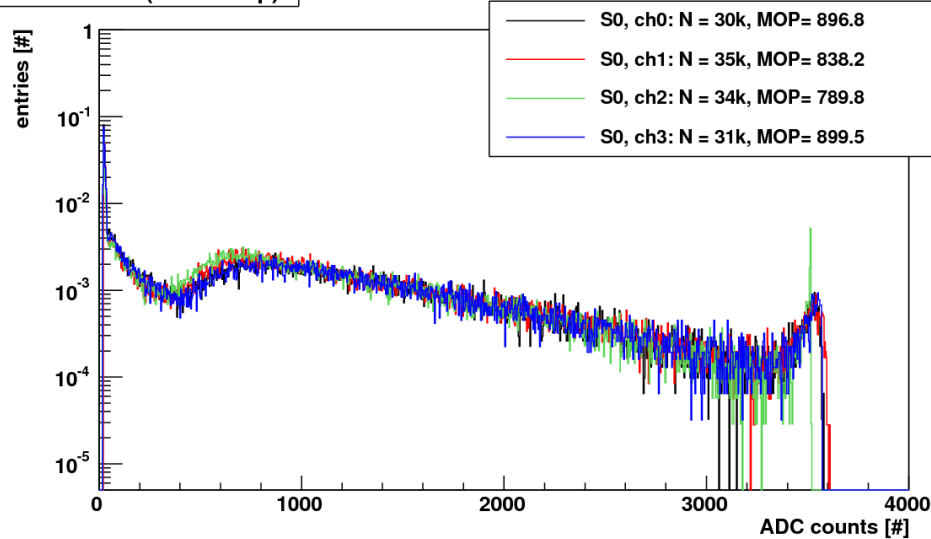
ACC CR-Spectra with a new PMT : Good shape

exchanged PMT: S-crate 2, ch2

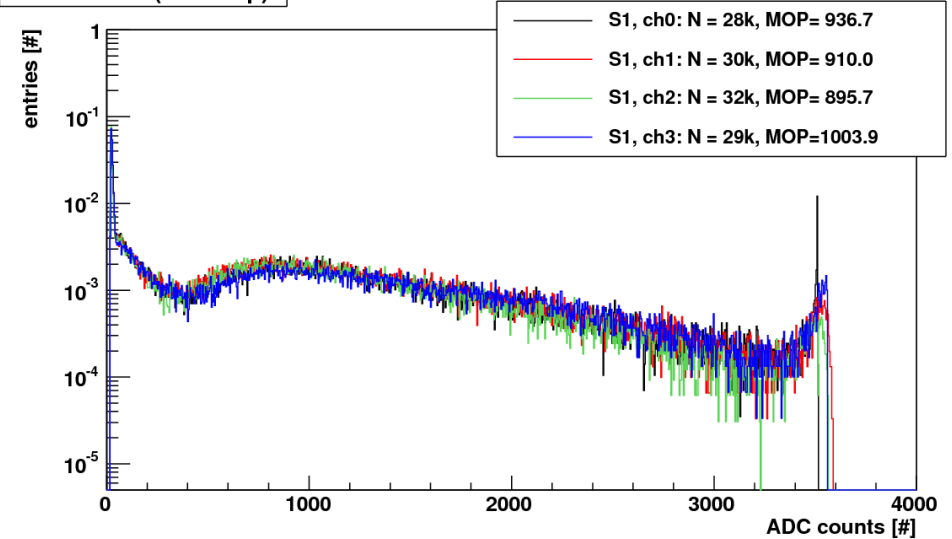
ADC Spectra (Cosmics, after calibration)

Andre Goerres
06-Oct-2010

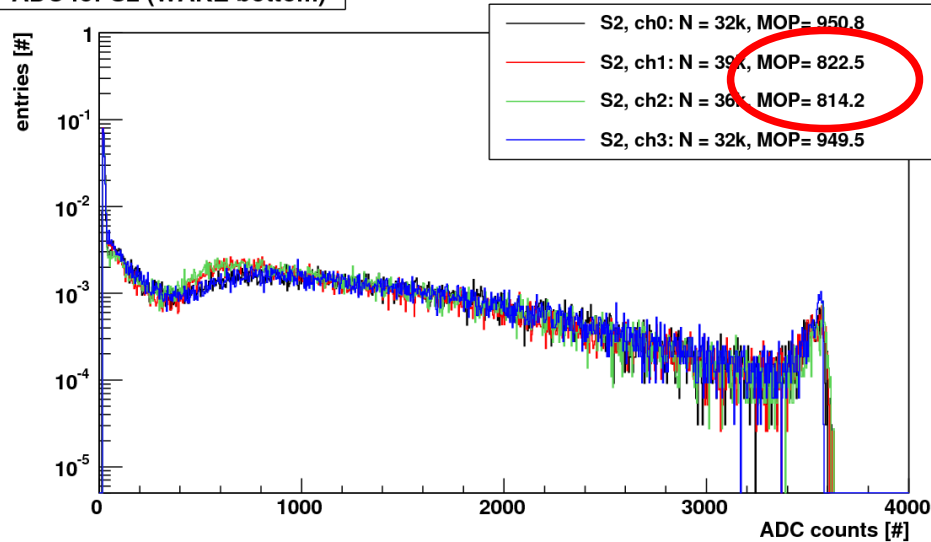
ADC for S0 (WAKE top)



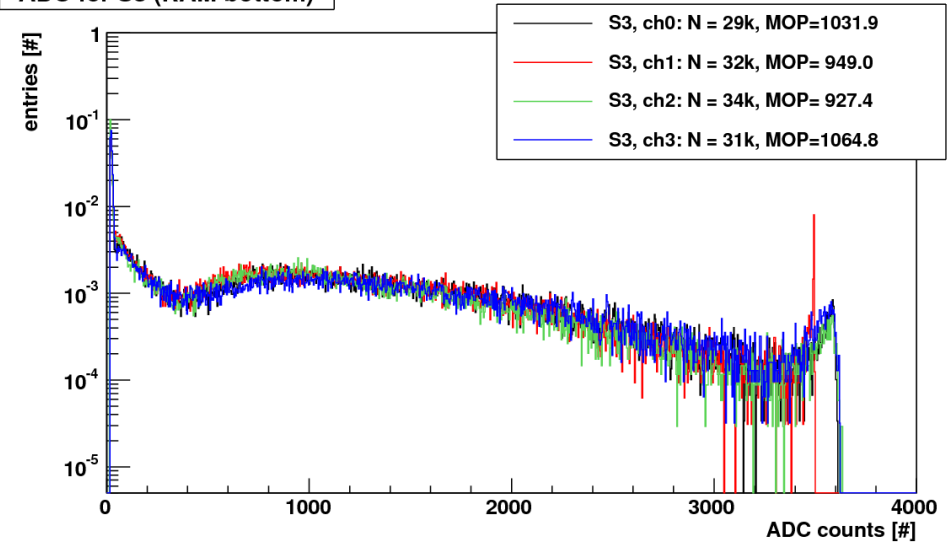
ADC for S1 (RAM top)



ADC for S2 (WAKE bottom)



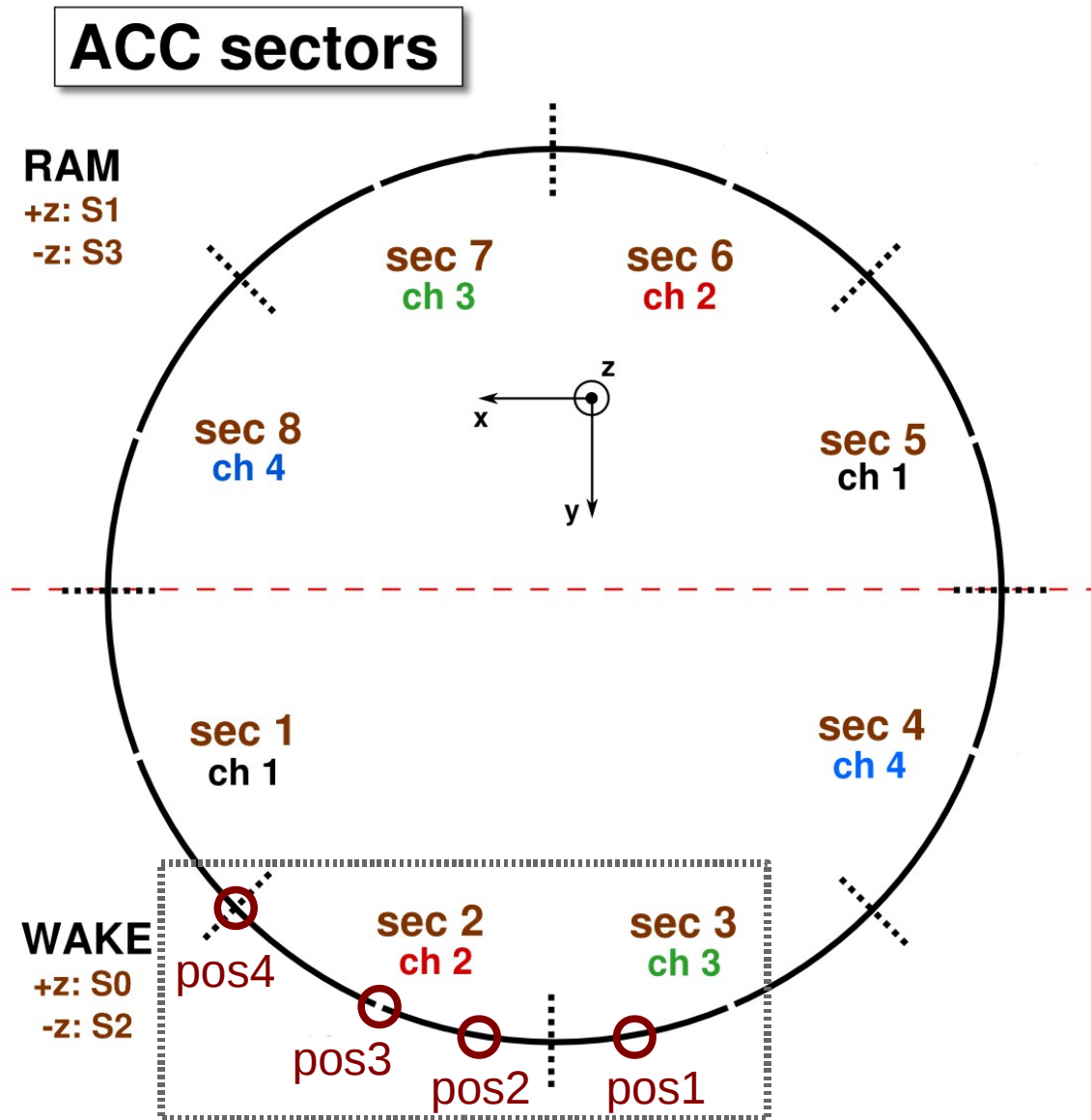
ADC for S3 (RAM bottom)



ACC during August-Beamtest

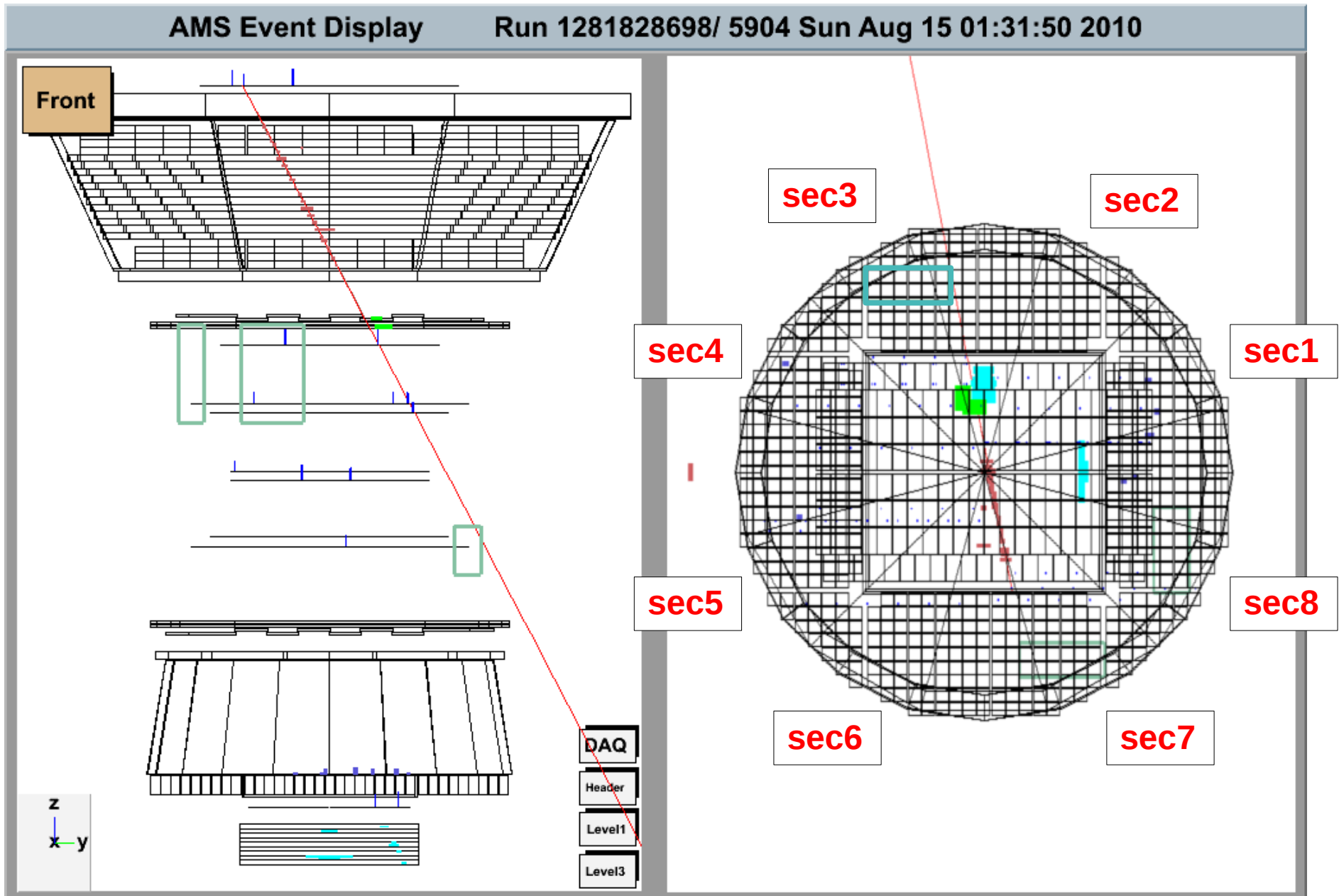
- purpose for ACC-Test: studies on inefficiency

- **position 1:**
central on panel,
exchanged PMT
- **position 2:**
central on panel,
reference PMT
- **position 3:**
slit-region between to panels,
same PMT
- **position 4:**
slit-region between to panels
different PMT



ACC-Test, Position 1: central hit on panel, exchanged PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 3



Particle TofTrd No 0 Id=2 p= $-1e+06 \pm 1e+19$ M= 0 $\theta=0.45$ $\phi=4.90$ Q= 1 $\beta=-1.000 \pm 1.000$ / -1.00 Coo=(-19.11,107.22,-135.40) AntiC=-23.28
Anticlust No 0 Sector=3 R= 4.95 ± 0.23 $\phi=112.50 \pm 12.99$ Z= -30.85 ± 10.00 E_{Dep}(MeV)= 5.18

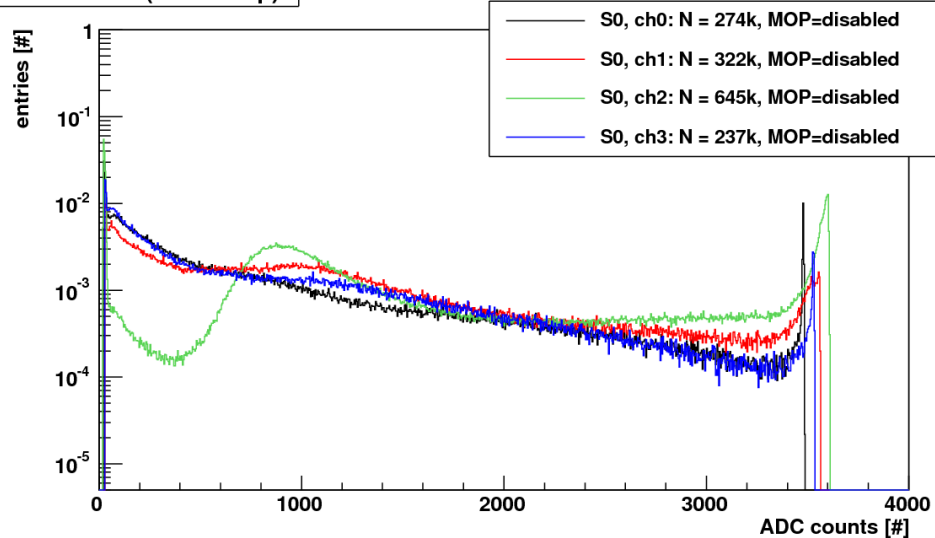
ACC-Test, Position 1: central hit on panel, exchanged PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 3

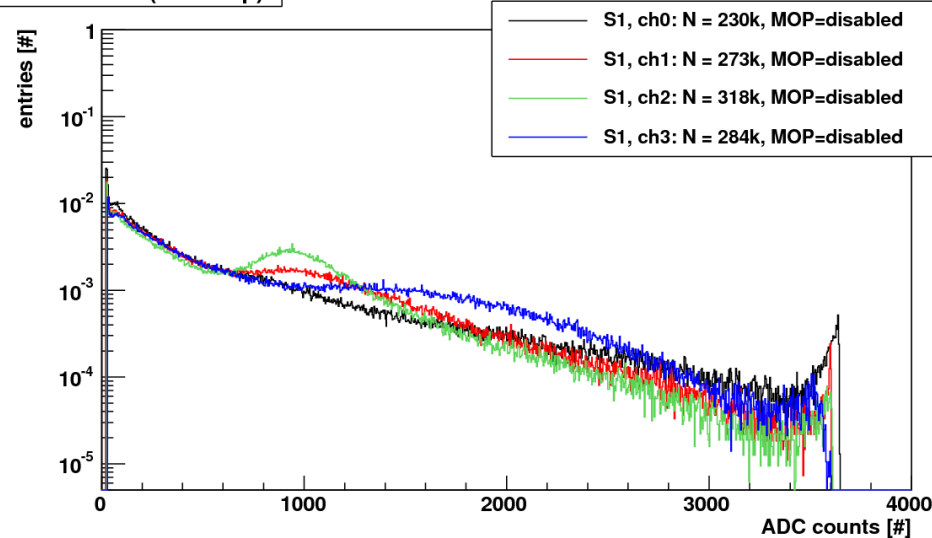
ADC Spectra (Beamtest, ACC-Test, Pos1)

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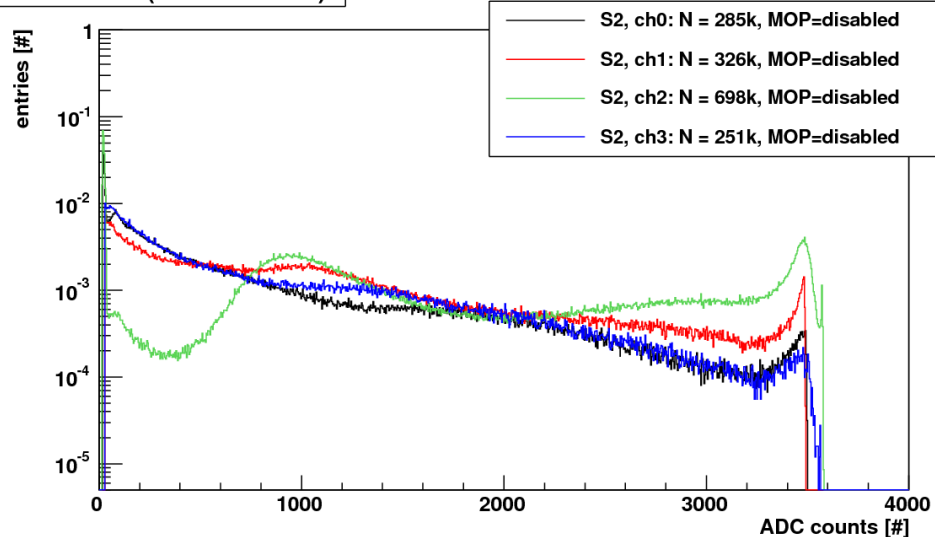
ADC for S0 (WAKE top)



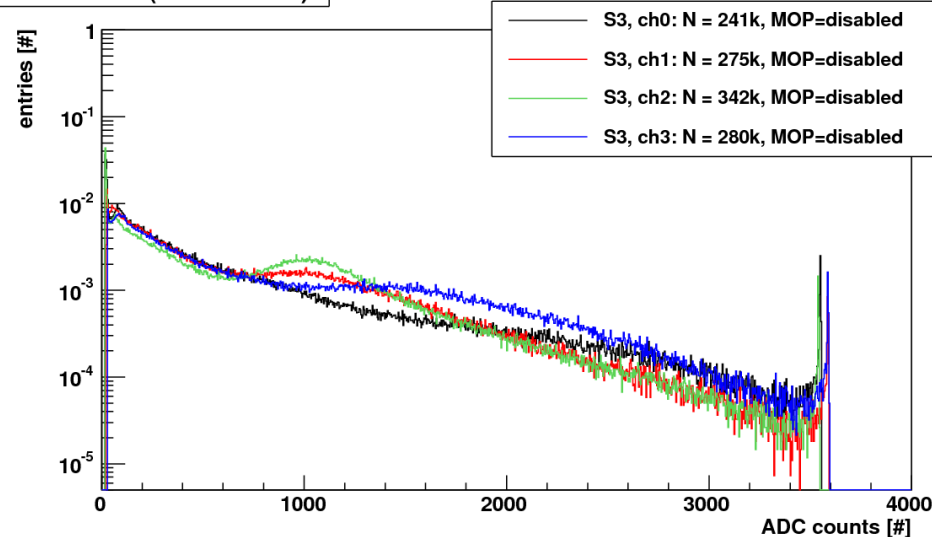
ADC for S1 (RAM top)



ADC for S2 (WAKE bottom)

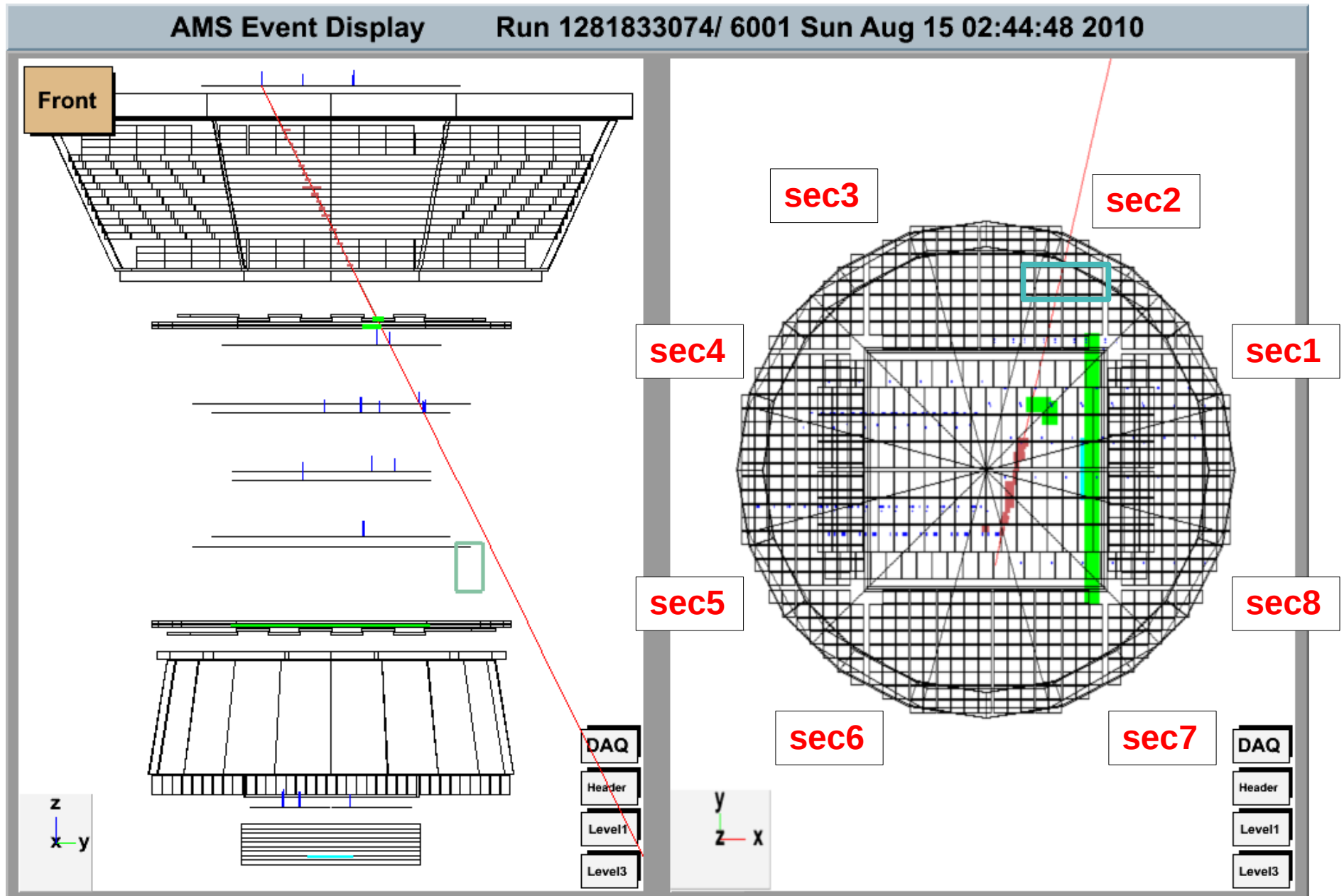


ADC for S3 (RAM bottom)



ACC-Test, Position 2: central hit on panel, normal PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 2



Particle TofTrd No 0 Id=2 p= $1e+06 \pm 1e+19$ M= 0 $\theta=2.71$ $\phi=1.35$ Q= 1 $\beta=1.000 \pm 1.000/1.00$ Coo=(13.29,21.67,53.05) AntiC=-13.07
Anticlust No 0 Sector=2 R=51.95 ± 0.23 $\phi=67.50 \pm 12.99$ Z=-37.66 ± 10.00 E_{Dep}(MeV)= 6.22

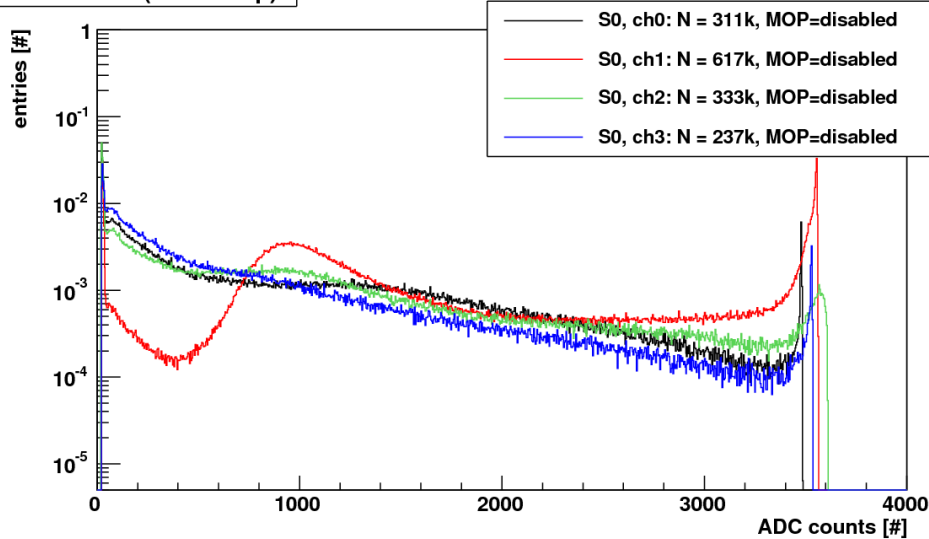
ACC-Test, Position 2: central hit on panel, normal PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 2

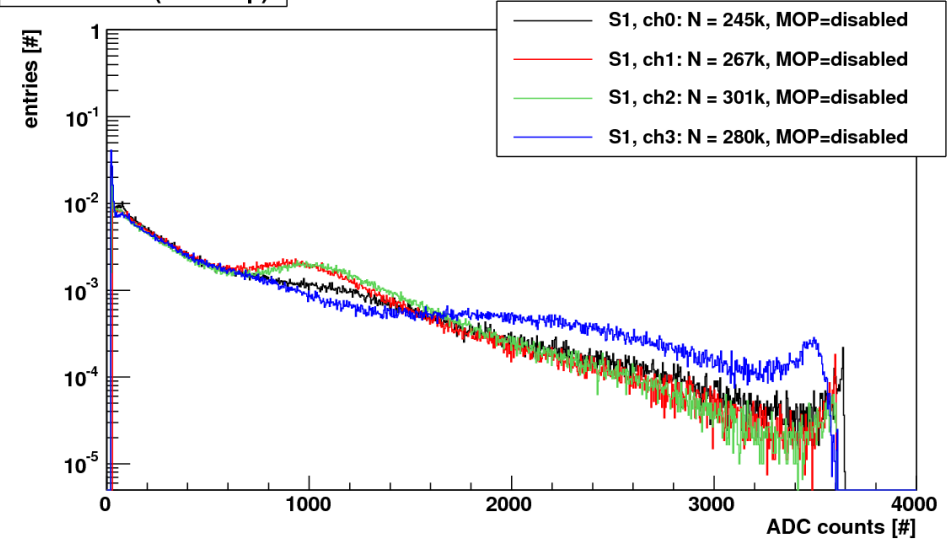
ADC Spectra (Beamtest, ACC-Test, Pos2)

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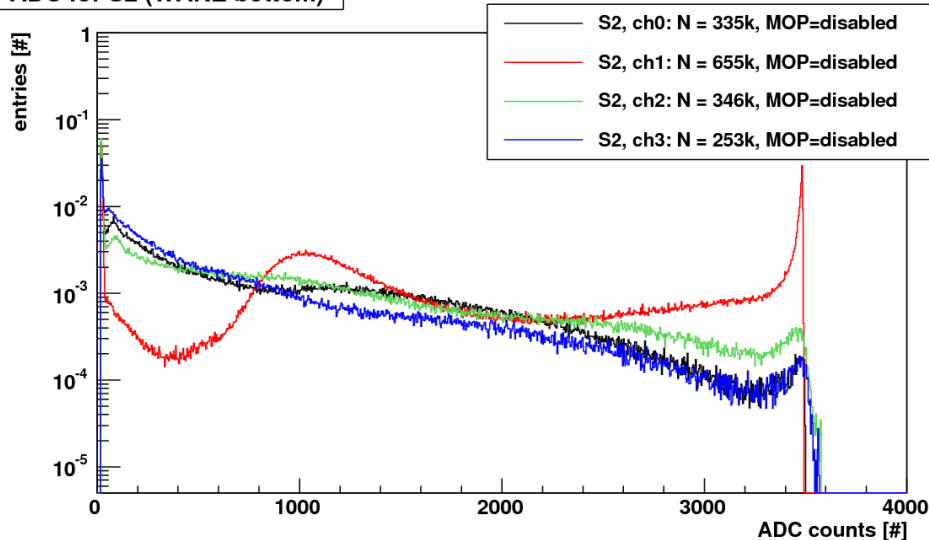
ADC for S0 (WAKE top)



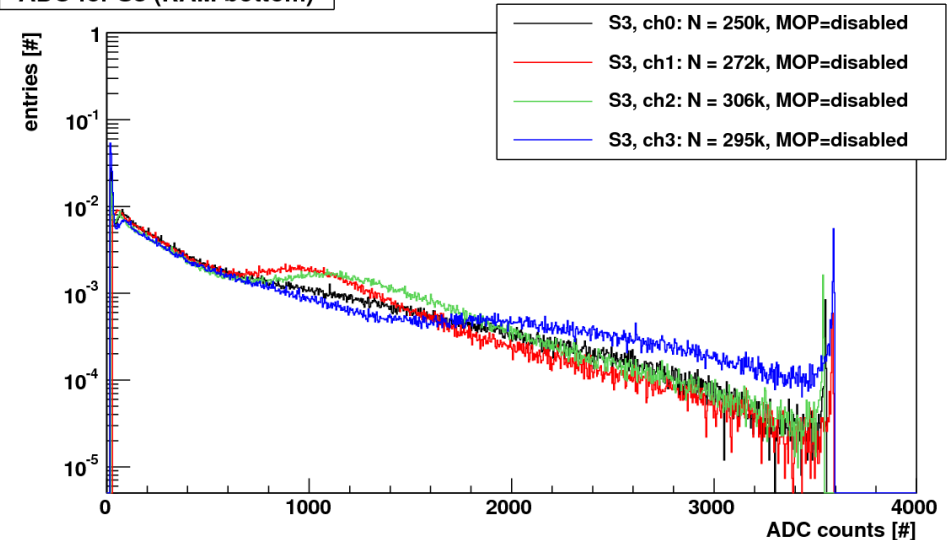
ADC for S1 (RAM top)



ADC for S2 (WAKE bottom)

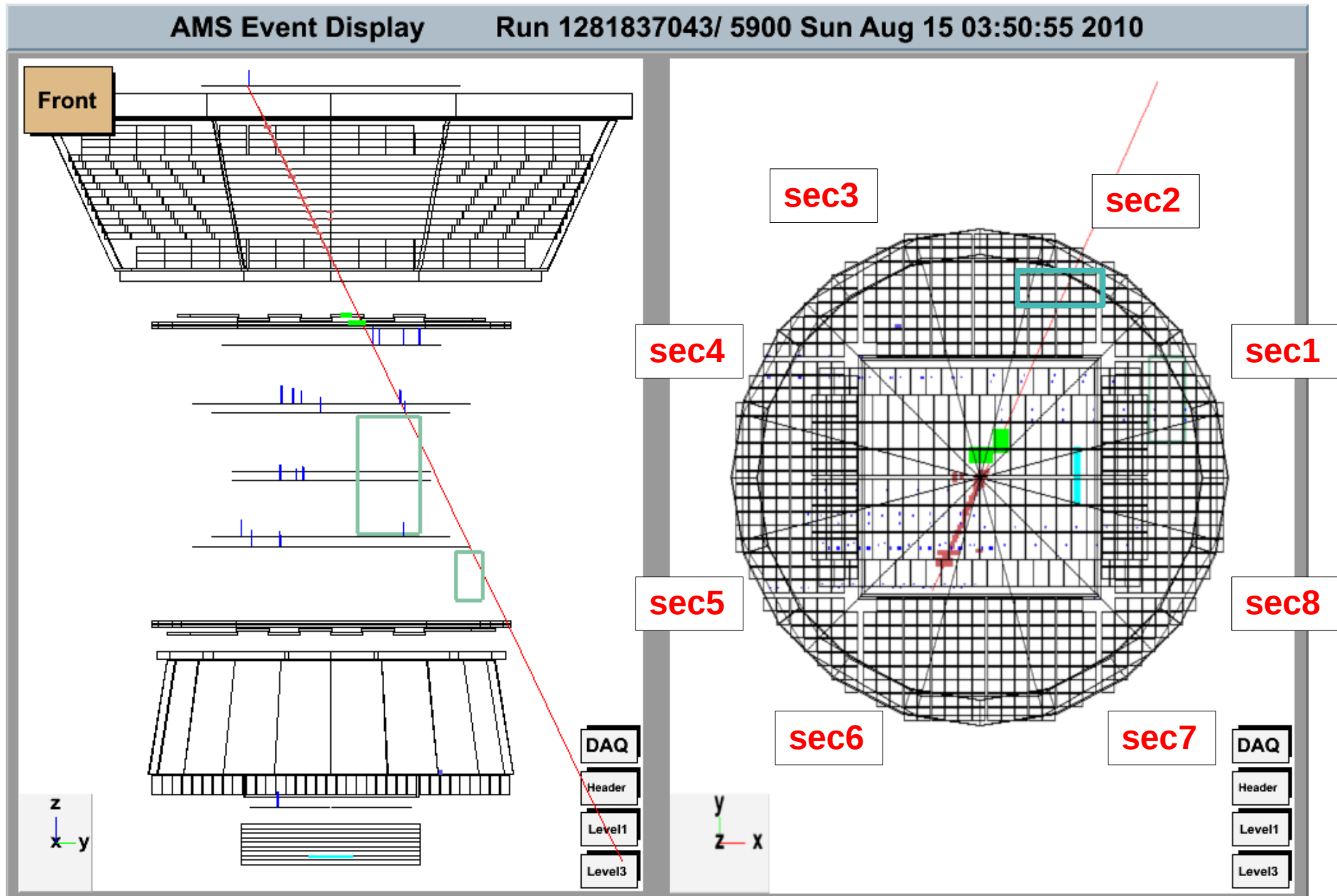


ADC for S3 (RAM bottom)



ACC-Test, Position 3: hit on slit, common PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 2



Particle TofTrd No 0 Id=2 p= $-1e+06 \pm 1e+19$ M= 0 $\theta=0.44$ $\phi=4.30$ Q= 1 $\beta=-1.000 \pm 1.000 / -1.00$ Coo=(43.90,97.23,-135.40) AntiC=-26.39
Anticlust to 1 Sector=2 R=51.95 ± 0.23 $\phi=67.50 \pm 12.99$ Z=-41.33 ± 10.00 E_{Dep}(MeV)= 6.64

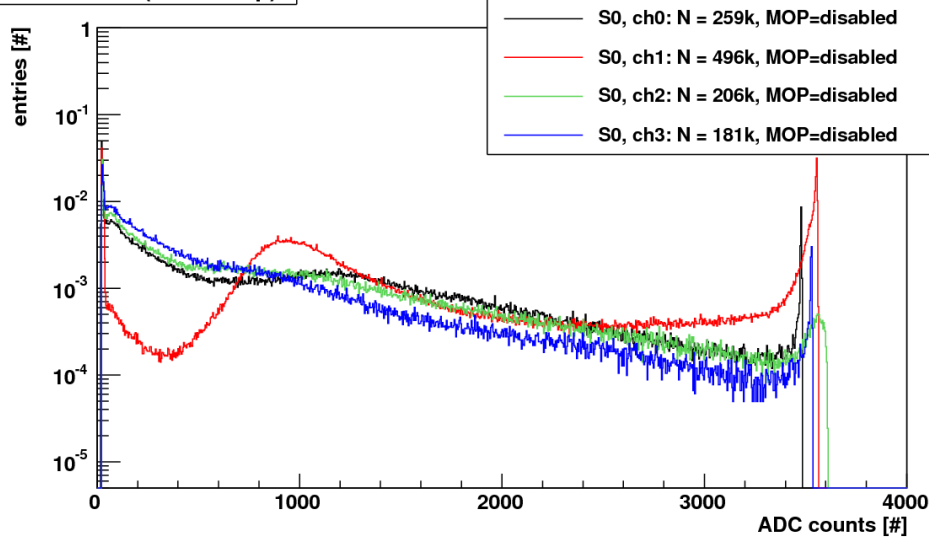
ACC-Test, Position 3: hit on slit, common PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 2

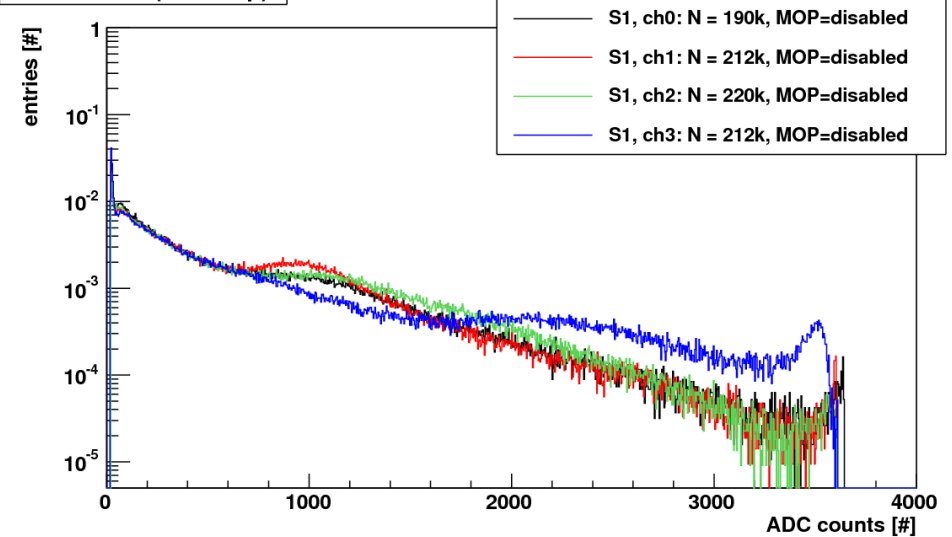
ADC Spectra (Beamtest, ACC-Test, Pos3)

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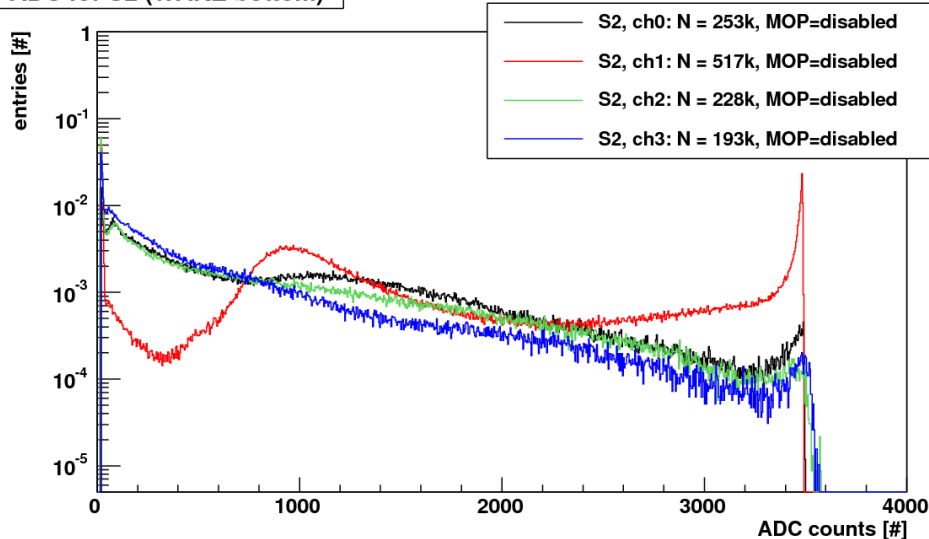
ADC for S0 (WAKE top)



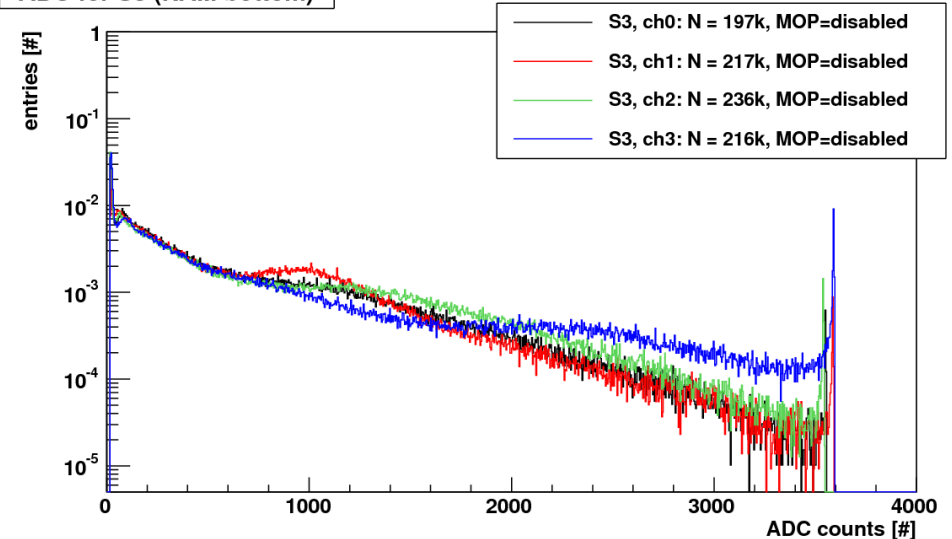
ADC for S1 (RAM top)



ADC for S2 (WAKE bottom)

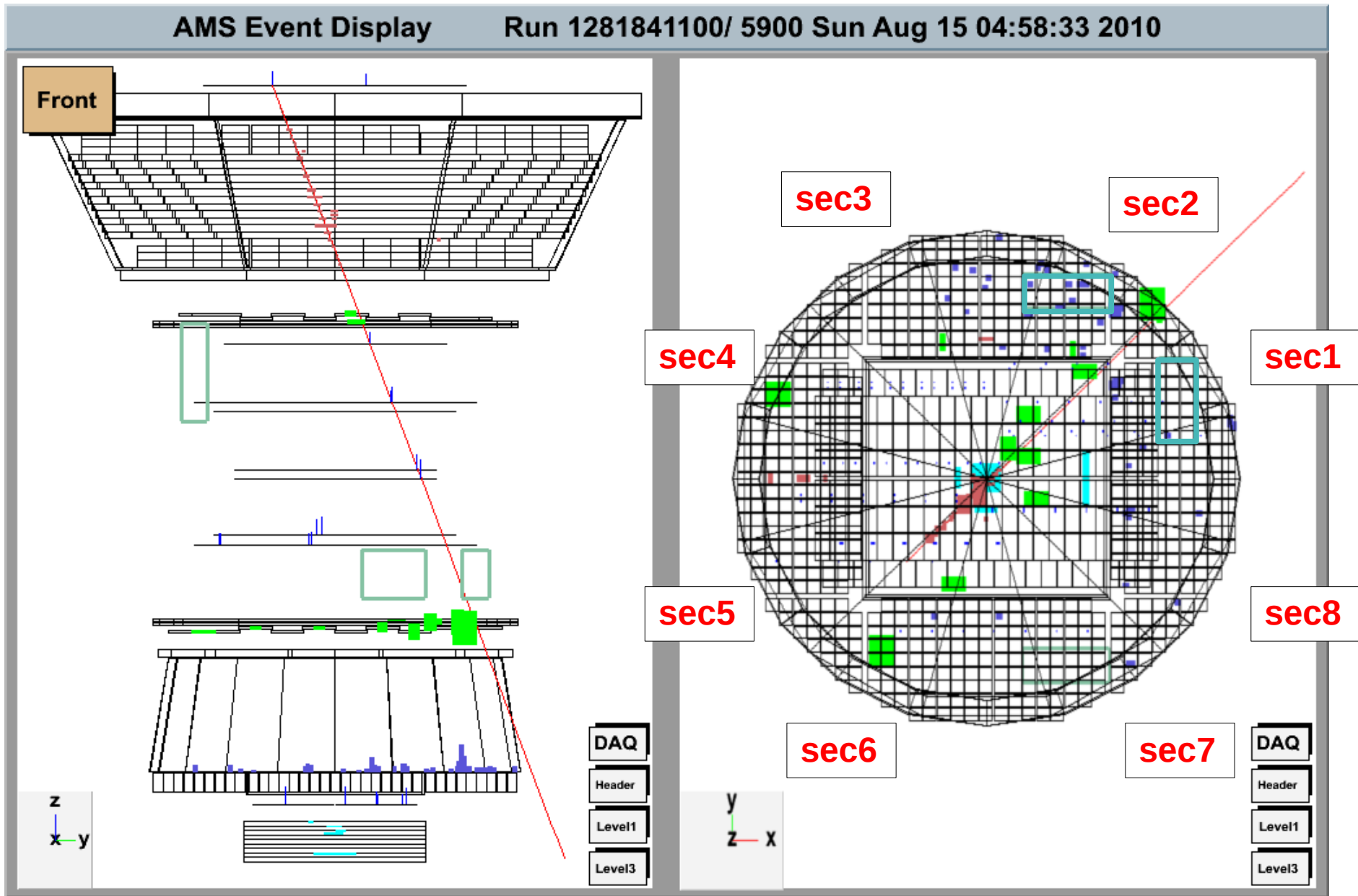


ADC for S3 (RAM bottom)



ACC-Test, Position 4: hit on slit, different PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 1&2



Particle ToFTrd No 0 Id=45 p= $1e+06 \pm 1e+19$ M= $-1.12e+06 \pm 1.1e+19$ $\theta=2.70$ $\phi=0.79$ Q= 1 $\beta= 2.000 \pm 0.092 / 2.00$ Coo=(14.09,12.68,53.05) AntiC=-23.42

Anticlust No 0 Sector=1 R= 4.95 ± 0.23 $\phi=22.50 \pm 12.99$ Z= -41.33 ± 10.00 $E_{nan}(\text{MeV})= 5.96$

Anticlust No 1 Sector=2 R= 4.95 ± 0.23 $\phi=67.50 \pm 12.99$ Z= -41.33 ± 10.00 $E_{dep}(\text{MeV})= 4.62$

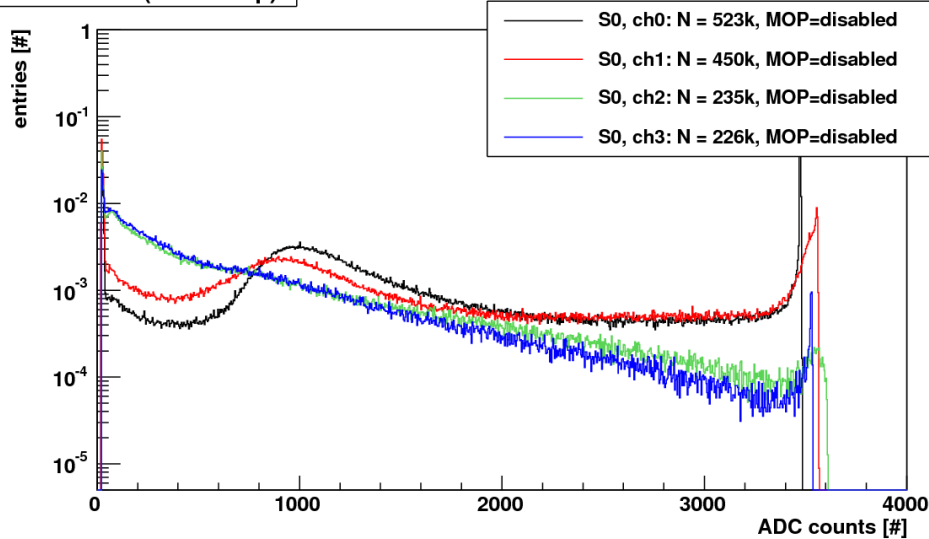
ACC-Test, Position 4: hit on slit, different PMT

Beam: 400 GeV protons, $\sim 2e6$ events, any2of4 Trigger, beam hitting sector 1&2

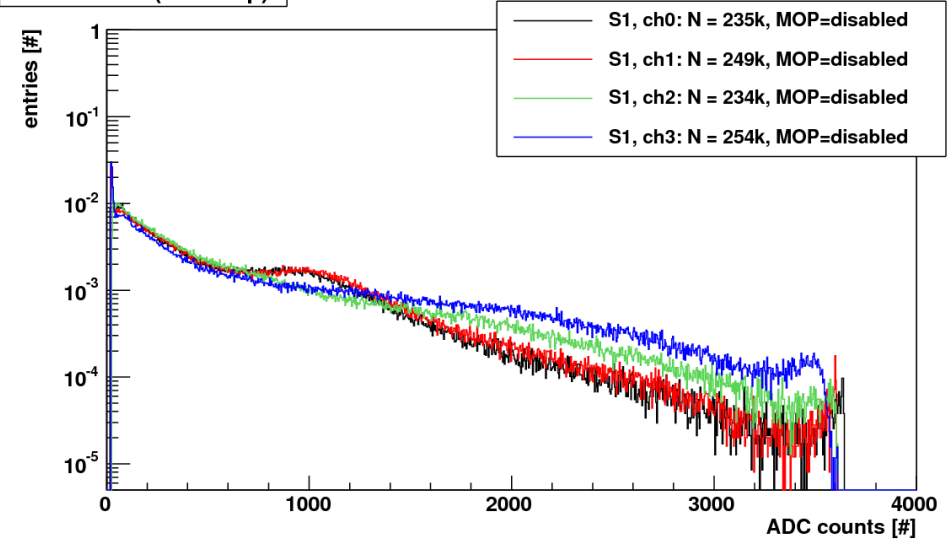
ADC Spectra (Beamtest, ACC-Test, Pos4)

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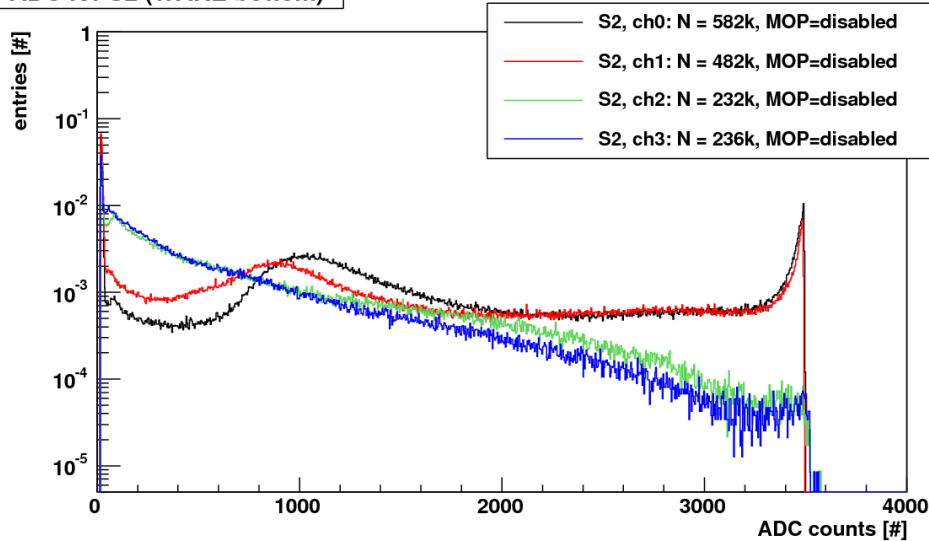
ADC for S0 (WAKE top)



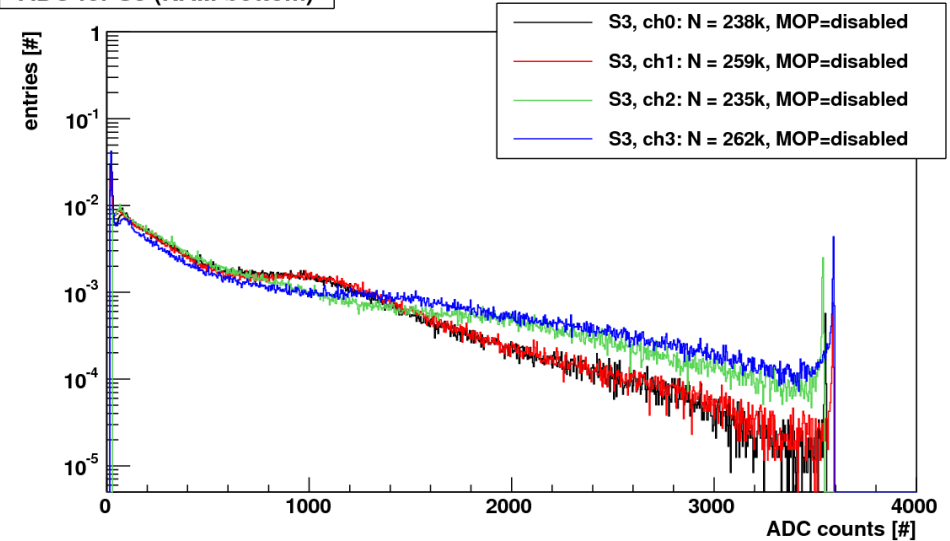
ADC for S1 (RAM top)



ADC for S2 (WAKE bottom)



ADC for S3 (RAM bottom)



Summary

- ACC has been in good shape since swapping a PMT during reintegration

August-Beamtest Data

- Beams are focused on the four different positions to study efficiency
- Analysis of Beamtest-Data is ongoing
(designed goal of inefficiency $< 10^{-4}$)