OLYMPUS Time of flight detectors

Status report

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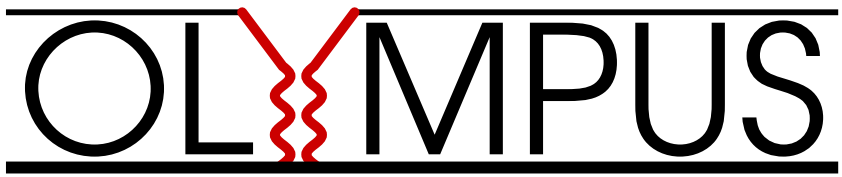
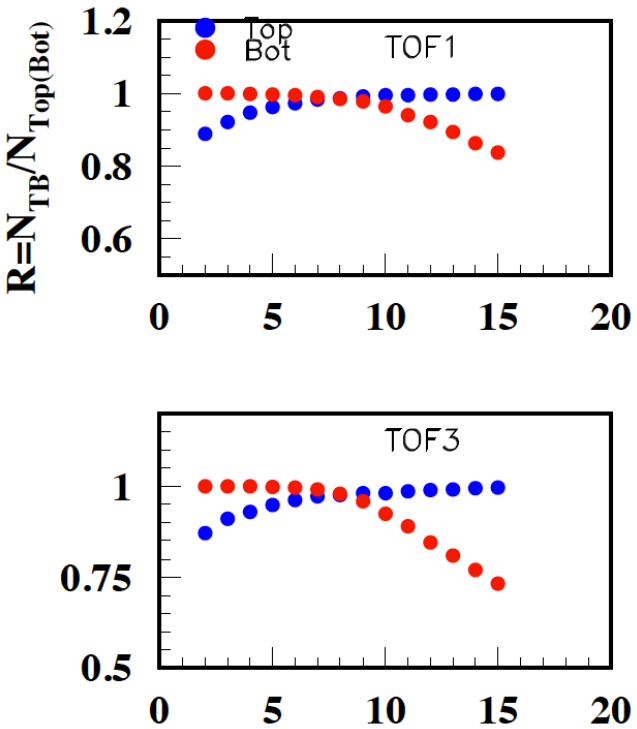


Pre 12/22/11 work

Threshold scanning technique

- Vary threshold of one section
- Look for trigger rate ratios

→ Coarse idea of threshold and gain

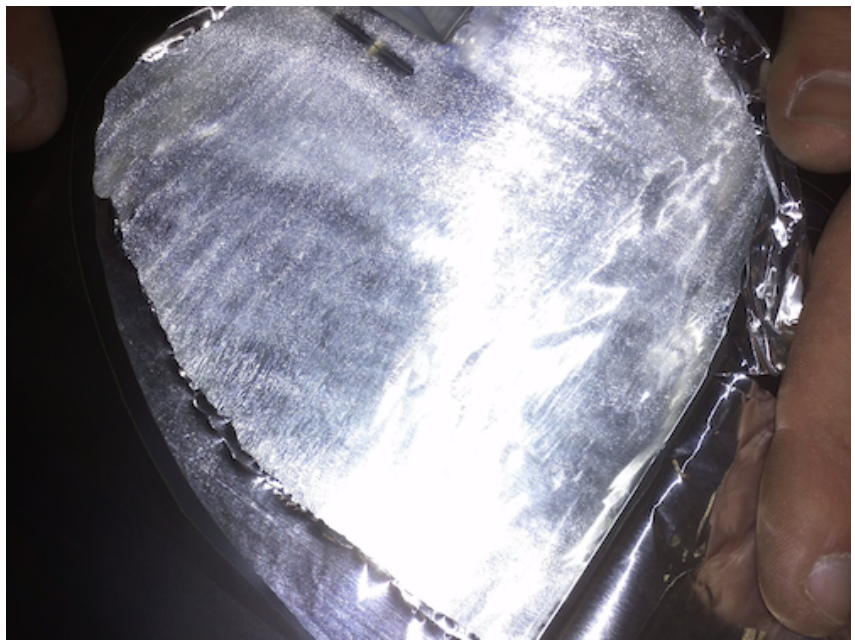


Time consuming, uncertain systematics

Work since 12/22/11

- 3 bars replaced (very strong attenuation)
- 26 PMTs re-attached (low signals at high HV)
- HV reduced after re-attachement ($\approx 150\,\mathrm{V}$)
- Thresholds adjusted with new method

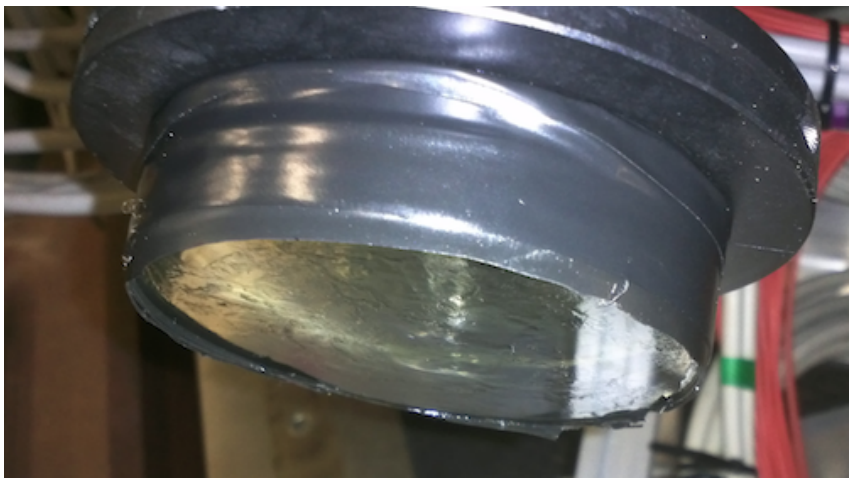
Exchange of bars



Time consumption: 2-3 h per bar with 3 people.

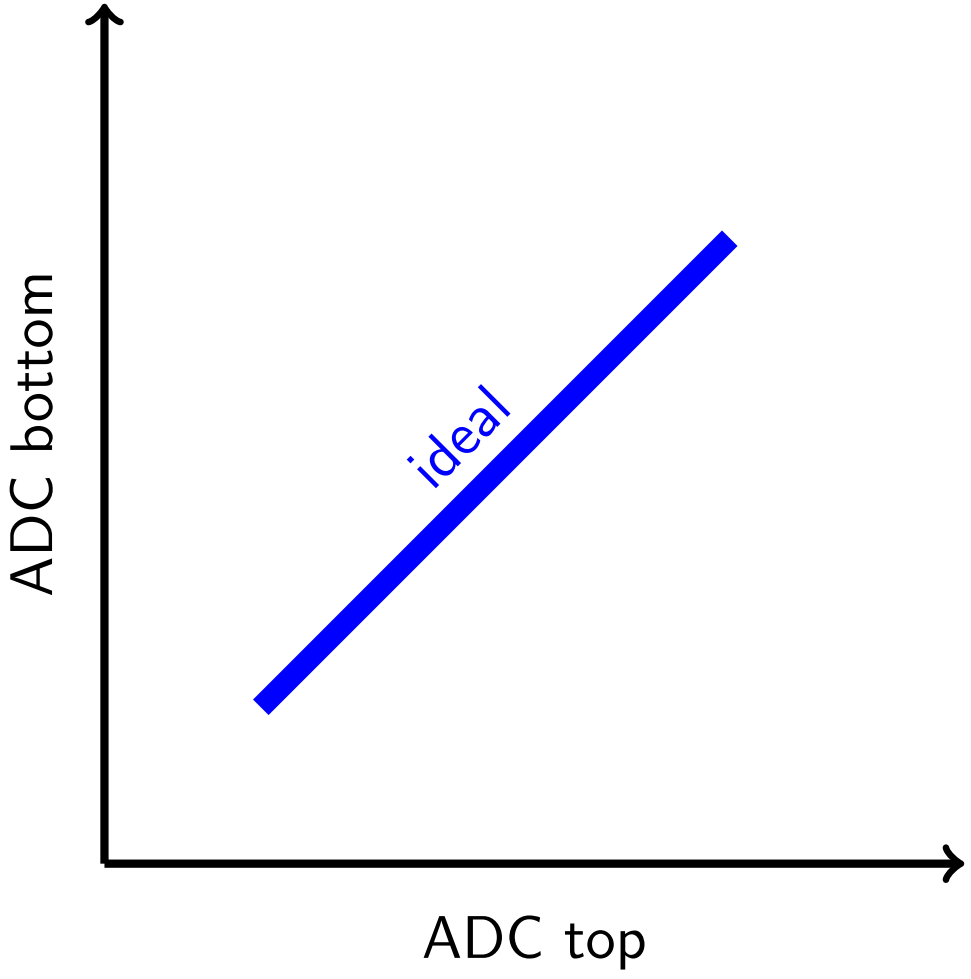
Re-attachment of PMTs

- black tape on light guide
- no optical grease
- no/bad mechanical contact
- ring loose or skewed



Time consumption: $\approx$ 30 minutes per PMT with 2 people.

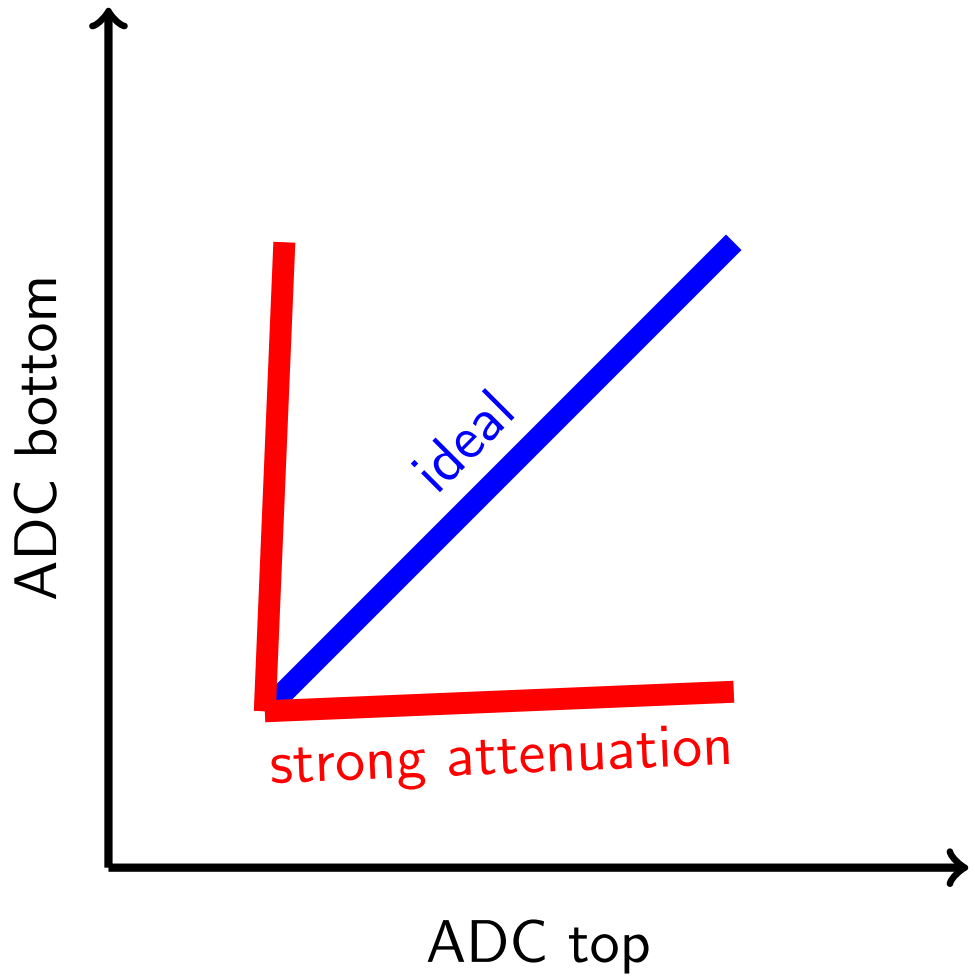
2D ADC spectra



What one could see:

- Gains
- Attenuation
- Thresholds

2D ADC spectra



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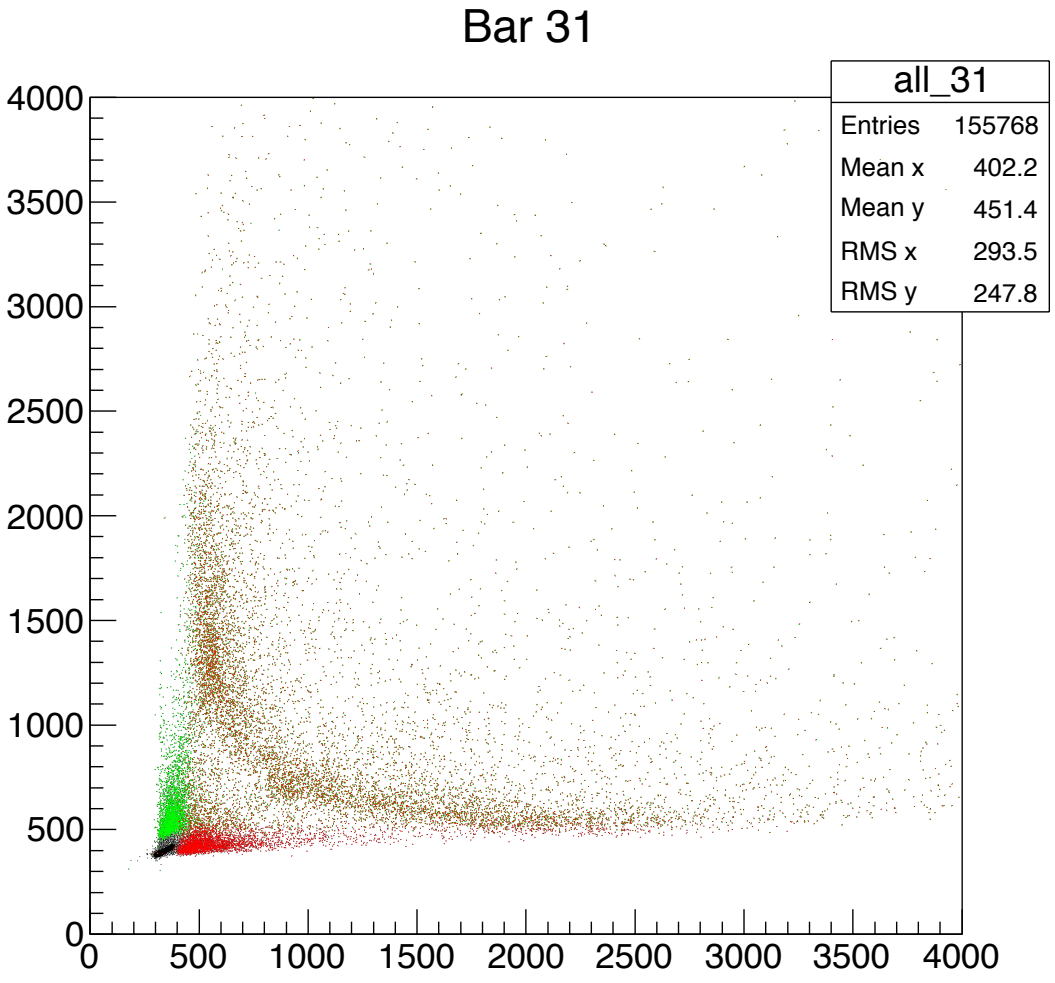
2D ADC example I



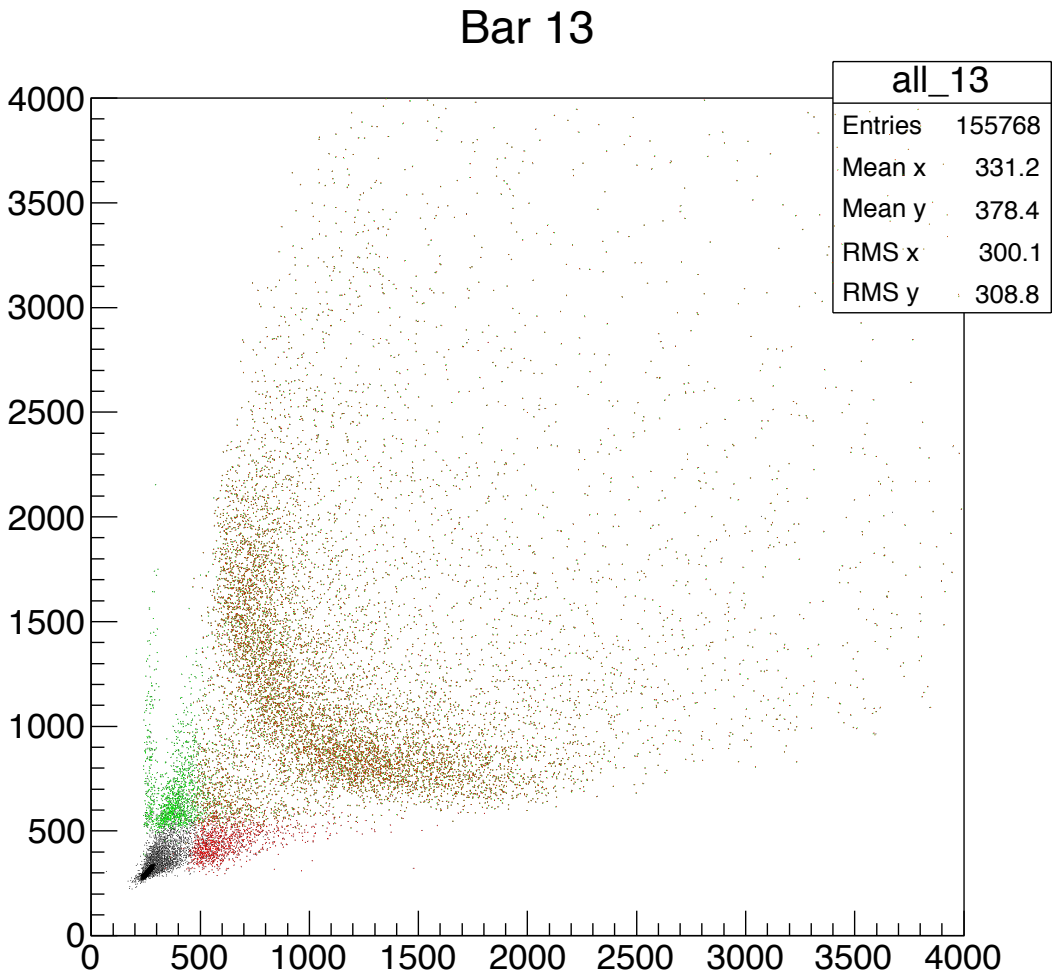
High attenuation

- high amplitudes
- almost no correlation
- large opening angle

Color code

- all (black)
- BOT hit (green)
- TOP hit (red)

2D ADC example II



Good TOF

- Good gain
- Thresholds well above pedestal

Conclusion

Summary

- Detector was in poor shape
- Worst candidates refurbished
- Analysis and adjustment tools developed

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Outlook

- 4 more PMTs to re-attach
- 1 broken light guide to fix
- Covering left sector
- Fine tuning of thresholds

TOF detector system ready for data taking!