Very High QE HPDs with a GaAsP Photocathode for the MAGIC Telescope Project

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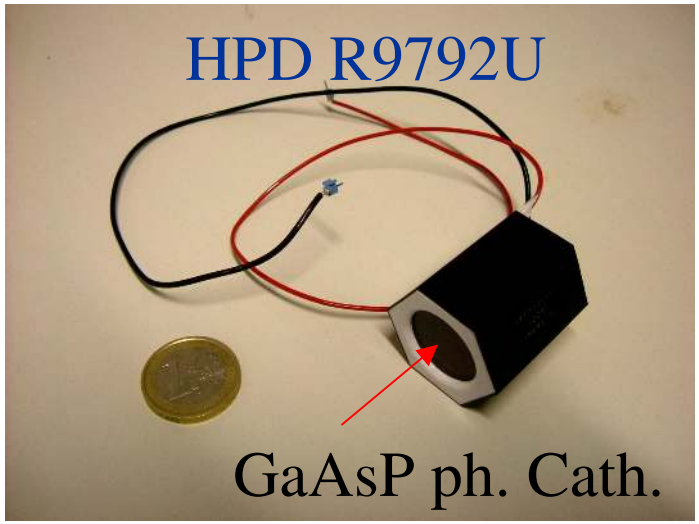
The MAGIC telescope

Image Atomospheric Cherencov Telescope

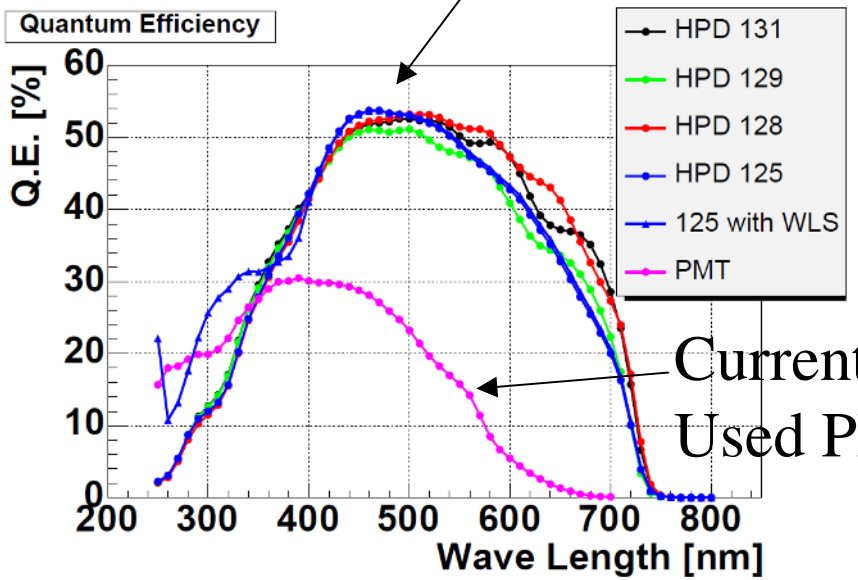
the largest single dish IACT (17m ϕ)

Lowest Threshld 60GeV

Currently PMT is used



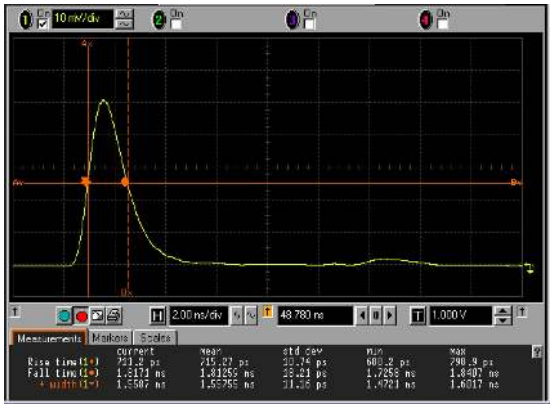
HPD R9792U



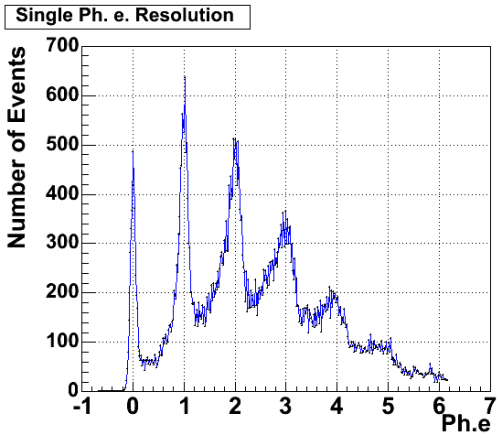
Currently Used PMT

Thr. Energy will be lowered by a factor of 2!

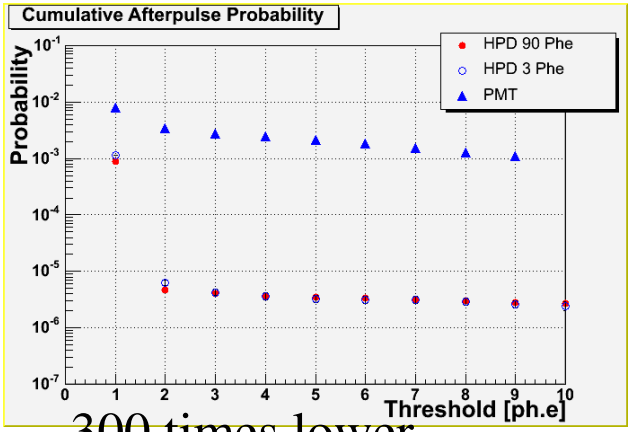
Properties of HPD R9792U



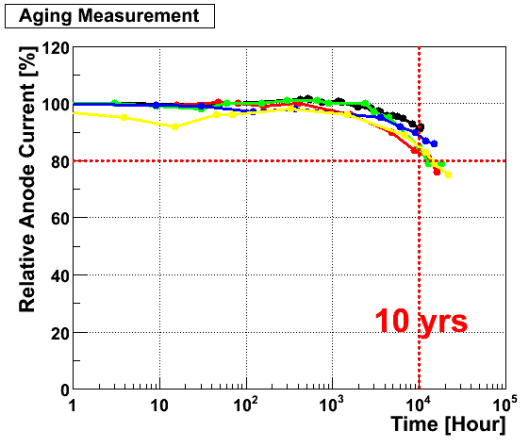
Fast Pulse 2.3 ns



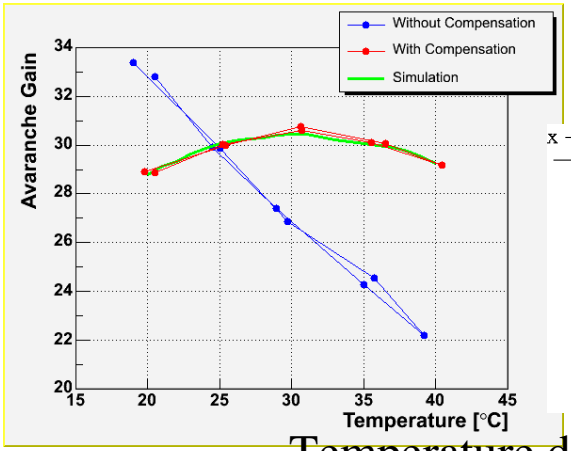
Excellent Single ph.e. resolution up to 6 ph.e.

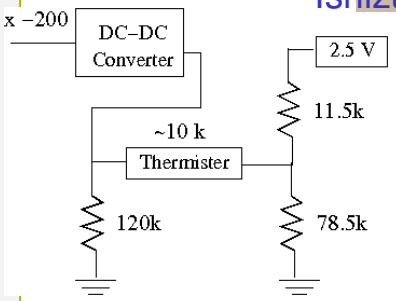


300 times lower Afterpulsing rate than Currently used PMT



10 years of lifetime under 300 MHz ph BG 1000h/ year





Thermister Ishizuka 103AT-2

Temperature dependence of Avalanche gain can be suppresed with a simple Compensation circuit with a themistor