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

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The MAGIC telescope
Image Atomospheric Cherenkov Telescope
the largest single dish IACT (17m $\phi$)
Lowest Threshld 60GeV
Currently PMT is used

HPD R9792U

GaAsP ph. Cath.

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.**
- **10 years of lifetime under 300 MHz ph BG 1000h/ year**
- **300 times lower Afterpulsing rate than Currently used PMT**
- **Temperature dependence of Avalanche gain can be suppressed with a simple Compensation circuit with a thermistor**

- **Thermister Ishizuka 103AT-2**

![Graphs and charts showing properties of HPD R9792U](image-url)