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# Upgrade of the MAGIC Telescope with a Multiplexed Fiber-Optic 2GSamples/s FADC Data Acquisition System system

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## Abstract content

In February 2007 the MAGIC Air Cherenkov Telescope for gamma ray astronomy was fully upgraded with a ultra fast 2GSamples/s digitization system. Since the gamma ray signals are very short, a fast readout can minimize the influence of the background from the light of the night sky.
Fast flash analog to digital converters (FADCs) are commercially available, but they are prohibitively expensive and power consuming for the MAGIC camera which contains 576 pixels. The upgraded readout system uses a novel technique of fiber-optic multiplexing which uses 10 bit 2Gsamples/s FADCs to digitize 16 channels consecutively and optical fibers to delay the analog signals. A distributed data acquisition system using GBit Ethernet and FiberChannel allows to read out the 100 kB events with a continuous rate of up to 1 kHz.

## If this papers is presented for a collaboration, please specify the collaboration

MAGIC

## Summary

## Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 1481-1484

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