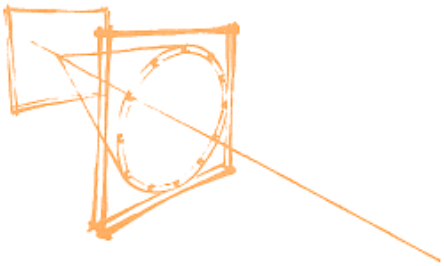

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Application of Geiger-mode photo sensors in Cherenkov detectors

mardi 4 mai 2010 10:15 (1 minute)

Silicon-based photon sensors (SiPMs) working in the Geiger-mode represent an elegant solution for the the readout of particle detectors working at low-light levels like Cherenkov detectors. Especially the insensitivity for magnetic fields makes this kind of sensors suitable for modern detector systems in subatomic physics which are usually employing magnets for momentum resolution. On the other hand SiPMs are exhibiting fairly high noise levels which in priciple can be reduced by cooling. In our institute we are characterizing SiPMs of different manufacturers for selecting sensors and finding optimum operating conditions for given applications. Recently we built a timing detector with cooled and temperature-stabilized SiPM readout. The performance was tested in an accelerator environment using electrons with about 500 MeV at the beam test facility of Laboratori Nazionali di Frascati. This talk will present our results on sensor characterization and selected Cherenkov applications.

Please indicate ”poster” or ”plenary” session. Final decision will be made by session coordinators.

plenary

Auteur principal: Dr MARTON, Johann (Stefan Meyer Institute)

Co-auteurs: M. AHMED, Gamal (Stefan Meyer institut); Dr SUZUKI, Ken (Stefan Meyer Institute); Dr BUEHLER, Paul (Stefan Meyer Institute)

Orateur: Dr MARTON, Johann (Stefan Meyer Institute)

Classification de Session: Poster Session 1 (Summary)

Classification de thématique: Photon detection for Cherenkov counters