
Seminar Fizičkog odsjeka

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SIDDARTHA experiment at DAPHNE
(SIDDARTHA Silicon Drift Detectors for
Hadronic Atom Research by Timing Application)

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The SIDDHARTA experiment plans to continue the successful measurements of kaonic atoms at DAFNE initiated by DEAR. SIDDHARTA, differently from DEAR, will use triggered X-ray detectors, namely Silicon Drift Detectors (developed in the framework of the collaboration) to perform, for the first time, few eV precision measurements of kaonic hydrogen and kaonic deuterium transitions. Such measurements are related to yet not-well understood aspects of the non-perturbative QCD in the strangeness sector. The SIDDHARTA setup was installed at DAPHNE in late summer 2008; first results for kaonic helium transitions to the 2p level will be shown, together with future plans.

Trigger system for AMADEUS experiment at DAPHNE
(AMADEUS - Antikaon Matter At DAPHNE Experiments
Unraveling Spectroscopy)

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Multi-Pixel Photon Counters (MPPC) consist of hundreds coupled micro silicon Avalanche Photo-Diodes (APD) working in Geiger mode. The high gain, low noise and low voltage values needed for operation of these relatively new devices, together with their good behaviour in magnetic fields make them ideal for the readout of thin scintillating fibers as front-end detectors, as the ones that are planned to form the trigger system of AMADEUS experiment. We present here a response study for Hamamatsu S10362-11-050U MPPC characterizing properties as gain, dark

noise, linearity, single photo-electron efficiency, etc. A testing set-up with MPPCs coupled to scintillating fibers for the readout of light produced by a Sr90 beta source was used. Geant3 simulation and experimental results for response to the electrons from Sr90 source will be shown. Response to particles coming from DAPHNE beam will be also presented.
