

## Test beam experiment with FARICH prototype

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The FARICH ('Focusing' Aerogel RICH) system is suggested for particle identification at Super Charm-Tau Factory project currently being developed at Budker Institute of Nuclear Physics (Novosibirsk, Russia). The only candidate for the photon detectors of the FARICH are SiPMs. The FARICH prototype was tested with 1 GeV electrons on the test beam line at VEPP-4M collider. Multilayer focusing aerogels as well as a single layer aerogel were tested. The radius resolution of Cherenkov ring has been obtained and agrees well with the predicted value.

The photon detector of the prototype consisted of 32 SiPMs with active area  $2.1 \times 2.1$  mm produced by the CPTA company (Moscow, Russia). The custom made discriminator boards and the CAEN V1190B multihit TDC were used for the signal readout. The timing resolution for single photons varies from 350 to 900 ps for different channels in the presence of a very high dark rate (up to 10 MHz per channel). The dependence of timing resolution from dark rate was investigated.

The new photon detector for the FARICH prototype with better coordinate resolution is under development. This detector will consist of 64 SiPMs with active area  $1.28 \text{ mm}^2$ . The main purpose of this detector will be detailed measurement of 'focusing' aerogel radiators parameters.

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