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Particle identification system based on dense aerogel

For experiments with the SND detector at the electron-positron collider VEPP-2000 a new particle identification system is designed, constructed, and put into operation. The system is designed for the separation of π and K mesons up to particle energy of 1 GeV, in the case of dense aerogel with a refractive index $n = 1.13$, and e/π -separation energy up to 0.45 GeV, in the case of the aerogel with $n = 1.05$. Cherenkov radiator is dense aerogel with a refractive index $n = 1.13$. Structurally, the system has the form of a barrel, divided into 9 sections in the axial angle. Light collection is implemented through green wave length shifter on the flat PMT with micro channel plate. MIP particle creates a signal 6–10 photoelectrons. The system was calibrated on the e , μ , π and K particles produced in e^+e^- collisions.

The present report is a preliminary result on the measurement cross-section of the process $e^+e^- \rightarrow K^+K^-$.

quote your primary experiment

Spherical neutral detector

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