



Contribution ID: 12

Type: **not specified**

## Tracking system of CMD-3 detection and kaon identification.

*Wednesday 24 August 2016 15:00 (20 minutes)*

The detector tracking system consists of the cylindrical drift chamber (DC) and double-layer cylindrical multi-wire proportional Z-chamber, both used for a trigger, and both are installed inside thin ( $0.2 X_0$ ) superconducting solenoid with 1.3T field.

DC contains 1218 hexagonal cells and allows to measure track parameters with high accuracy (a momentum resolution - 1.5-4.5% for 200-1000 MeV/c momentum, an angular resolution -  $\sigma_{\{\varphi\}} = 8-3.5$  mrad and  $\sigma_{\{0\}} = 20$  mrad) as well as specific ionization ( $\sigma_{\{dE/dx\}}=11-14\%$ ). The coordinate along the wire is measured by charge division technique.

Z-chamber provides z-coordinate determination of the tracks with accuracy  $\sim 0.5$  mm by measuring the cathode strip information. The signals coming from anode sectors are used for the first level trigger and have time jitter  $\sim 5$  ns.

The ionization losses of pions and kaons in the DC are used for procedure of  $K/\pi$ -separation. The separation is based on probability density functions for kaons and pions. This method is developed using events of the process  $e^+e^- \rightarrow K+K-\pi+\pi-$ .

**Primary author:** Mr SHEMYAKIN, Dmitry (Budker Institute of Nuclear Physics)

**Presenter:** Mr SHEMYAKIN, Dmitry (Budker Institute of Nuclear Physics)

**Session Classification:** Young Scientists' Forum

**Track Classification:** Detector design and technologies