Contribution ID : **60** Type : **Oral talk**

CONCEPT OF THE MUON DETECTOR FOR THE SPASCHARM FACILITY AT THE U-70 ACCELERATOR COMPLEX OF THE NRC ”KURCHATOV INSTITUTE” - IHEP

Friday, 30 October 2026 11:45 (15)

The conceptual design of the SPASCHARM facility [1] calls for its relocation to channel No. 24 of the U-70 Accelerator Complex, with a muon detector positioned at the end of the facility. This detector is required to identify J/ψ particles via their decay into two muons (μ+μ−) and subsequently to search for χc2 (spin 2) and χc1 (spin 1) through their decays into J/ψ + γ, with the ultimate goal of measuring the gluon contribution to the proton spin. This paper presents the concept for the muon detector’s construction. The proposed design comprises three pairs of tracking planes with a total area of ˜12 m², interleaved with steel filters assembled from disks approximately 4 m in diameter and 220 mm thick. Each pair of tracking planes consists of two identical planes oriented orthogonally to one another, and each such plane is in turn composed of two layers of drift tubes housed in aluminum tubes 3.7 m long with an inner diameter of 50 mm. Openings of ˜20 × 20 cm² are provided in the central regions of the steel disks and tracking planes, coaxial with the primary proton beam, to prevent the tracking planes from being overloaded by primary protons and the products of their interaction with the steel disk material.

Primary author(s) : FAKHRUTDINOV, Rinat (NRC ”Kurchatov institute” - IHEP)

Presenter(s) : FAKHRUTDINOV, Rinat (NRC ”Kurchatov institute” - IHEP)

Session Classification : Facilities and advanced detector technologies

Track Classification : Facilities and advanced detector technologies