

Vertex Detector of NA61/SHINE experiment for open charm measurements at CERN SPS energies

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The heavy-ion programme of the NA61/SHINE experiment at CERN SPS is expanding to allow precise measurements of exotic particles with short lifetime. The study of open charm mesons allows for investigation of the properties of the hot and dense matter produced in nuclear-nuclear collisions. Vertex Detector for open charm measurements at the SPS is being constructed by the NA61/SHINE Collaboration to meet the challenges of high spatial resolution of secondary vertices and efficiency of track registration.

A small-acceptance version of the Vertex Detector is being tested this year, later it will be expanded to a large-acceptance version. Simulation studies will be presented. A method of track reconstruction in the inhomogeneous magnetic field for the Vertex Detector was developed and implemented. Numerical calculations show the possibility of high precision measurements of charmed particles in heavy ion collisions.

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