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Status of the SCAN-3 at the Nuclotron internal targets

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A precision three-arm magnetic spectrometer SCAN-3 is being built for detecting charged (pi, K, p) and neutral (n) particles produced at the LHEP Nuclotron internal target in dA collisions. This project is aimed at studies of highly excited nuclear matter. The matter will be studied through observation of its particular decay products, that is, pairs of energetic particles with a wide opening angle, close to 180.

One of the objectives of the SCAN-3 experiment is to study η-nuclei, i.e. quasi-bound state of the η-meson and nucleons of the nucleus. The possibility of registering the decay products of η-nuclei with the required accuracy is considered. Particular attention is paid to one arm of the setup in the form of a magnetic spectrometer, which should ensure the accuracy of energy determination, first of all, π no worse than 4-5 MeV. The tracking system of the magnetic arm contains three single-coordinate straw detectors. Each straw detector consists of two sets of drift tubes with a diameter of 6 mm. The results of arm simulation and testing are presented.

Author: DRYABLOV, Dmitry

Co-authors: AFANASIEV, Sergei (JINR); KUTINOVA, O.; KUZNETSOV, Alexander (JINR,LHEP); LYSSAN, Victor (JINR); SAKULIN, Dmitriy (JINR); SUKHOV, Evgeni (JINR); USTINOV, Valentin (JINR VBLHEP); VARTIC, Victoria

Presenter: DRYABLOV, Dmitry

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