

SILICON PIXEL SENSORS FOR DETERMINATION OF CHARACTERISTICS OF PROTON BEAMS IN THE ENERGY RANGE 100 – 1000 MeV FOR THEIR USE IN TRACKING DETECTORS

Tuesday 2 July 2024 12:00 (15 minutes)

Silicon pixels detectors may be used in proton computed tomography for tumor treatment planning in hadron therapy. In the context of this task it seems important to obtain the characteristics of the proton beam used for diagnostics and for therapy with high precision. It is also important to study the properties and influence on the beam of various materials that make up tomography detector systems. In this work the characteristics of proton beams of different energies using experimental setup of silicon pixels detectors system have been studied. The study of properties of carbon composite supporting structures used for digital track calorimeter will also be presented.

The reported study was supported by the Russian Science Foundation, project no. № 23-12-00042, <https://rscf.ru/project/23-12-00042/>

Section

Applications of nuclear methods in science, technology, medicine and radioecology

Primary authors: PETROV, Vitalii (St Petersburg State University (RU)); Dr ZHEREBCHEVSKY, Vladimir (Saint-Petersburg State University)

Co-authors: ZEMLIN, Egor ("Saint-Petersburg State University", Department of Nuclear Physics Research Methods); MALTSEV, Nikolay (Saint-Petersburg State University); YURCHENKO, Semyon (Saint Petersburg State University, Laboratory of ultra-high energy physics); TORILOV, Sergey (St. Petersburg State University); KONDRATIEV, Valeriy (Saint-Petersburg State University); KOVALENKO, Vladimir (Saint Petersburg State University); VECHERNIN, Vladimir (St. Petersburg State University)

Presenter: PETROV, Vitalii (St Petersburg State University (RU))

Session Classification: Applications of nuclear methods in science, technology, medicine and radioecology