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The low energy neutron beam as a tool for QA-QC of particle detectors

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Neutron quasi-monoenergetic beam irradiations are presented delivered by proton- or deuteron induced reactions by CW-beam of protons or deuterons of the 5.5 MV-TN11 Tandem Van der Graaff particle accelerator of the NCSR “Demokritos”. Emphasis is given to the comprehension of all the interactive mechanisms resulting from the presence of the high background radiation, with respect to the neutron energy and the materials, as a QA_QC tool for the detectors.

A simulation model, based on the Geant4 program, was used to describe the experimental setup and the neutron impact. The simulation results were found to be in good agreement with the experimental results.

Primary author: Prof. GAZIS, Evangelos (Athens / CERN)

Presenter: Prof. GAZIS, Evangelos (Athens / CERN)

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