

FLUKA calculations for the pbar separator for FAIR

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Abstract

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The GSI (Darmstadt, Germany) will be expanded with the FAIR project (Facility for Antiproton and Ion research). Here I will present the FLUKA calculations related to the antiproton-production target. Every 10 s it will be bombarded by a pulse of  $2 \times 10^{13}$  primary protons with a kinetic energy of 29 GeV. It is necessary to know a radiation level in the pbar target during operation and afterwards for a radiation protection. FLUKA calculations were performed for the pbar target area. By means of these calculations an estimation of dose during operation and effective dose rates due to induced activity were done. The beam dump for the primary beam will be installed in the pbar target tunnel. The FLUKA was used as a tool for a beam dump design. In order to estimate antiproton losses a combined calculations were performed. The calculations were a combination of beam optical tracking and the FLUKA calculations.