ABOUT RESEARCH OF DECHANNELING LENGTH OF RELATIVISTIC PARTICLES IN CRYSTAL BY Si DETECTOR WITH SMOOTHLY TUNABLE THICKNESS OF DEPLETED LAYER

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In the experimental studies, see, e.g., /1/ a difference between the ionization loss of channeling and non-channeling negatively charged relativistic particles in a thick Si crystalline detector was not observed. However, authors of /2/ predict the sufficient difference if the crystal thickness is comparable to the de-channeling length.

Here, we propose to perform experimental research of ionization loss and de-channeling length of relativistic particles with use of the Si detector with smoothly tunable thickness of the depleted layer. Such detector was proposed in /3/ and has been used in measurements of ionization loss of 1 MeV electrons /3/ and 50 GeV protons /4/. Data on the evolution of the distribution of the ionization loss of channeling particles at the variation of the depleted layer thickness (in which the ionization lass are measured) would allow to check the theory and to determine the de-channeling length /2/.

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