Contribution ID : **28** Type : **not specified**

Research of work stability of diamond detectors that used in SCR DDIR

Tuesday, 6 October 2015 13:00 (15)

«Research of work stability of diamond detectors that used in SCR DDIR»

Influence of various factors to stability of ionizing radiation detectors installed in the cosmic ray spectrometer (SCR) based on diamond detectors of ionization radiation (DDIR) was studied in this work. Diamond detectors for SCR was made from single crystals of synthetic diamond type IIa.

Diamond detectors was studied successively in three different experiments. Increased ambient temperature up to 70 Celsius degree was the first experiment, prolonged exposure to ionizing radiation of various types and energies (check if the phenomenon of polarization) was the next experiment and changing the geometry of detectors irradiation was the last experiment.

The study revealed the presence of the strong influence of the polarization effect on the work of diamond detectors for registration the ionizing particles with short mean free path (in our experiment this was the a-particles of Pu-238).

Presentation type

Section talk (10+5 min)

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Session Classification : Methods of experimental physics - parallel I

Track Classification : Methods of experimental physics