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PS1-08: Characteristic X-Ray Radiation Excited by 450 MeV/Nucleon C+6 Ions and 1 GeV Protons in Extracted and Circulated Beams of Accelerator U70

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Results of experimental research on observation of characteristic X-ray radiation excited by the extracted beam of C+6 ions [1] and circulated beam of 1 GeV protons are presented. It was found that the background radiation of secondary particles [2] is not as an obstacle for observation of characteristic X-ray radiation spectral peaks at energies from a few to tens of keVs. Spectra of X-ray radiation from a few targets are presented. It is shown that characteristic X-ray radiation can be used for monitoring of the number of particles passed through a non-crystalline target. The applicability of the characteristic X-ray radiation for the monitoring in experiments on steering of proton and ion beams by crystalline deflector as well as for study of parametric X-ray radiation from crystalline deflector is discussed. Authors from Belgorod acknowledge the partial support by the MES of Russian Federation under project 3.2009.2014/K.

References

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2. A.G. Afonin, G.I. Britvich, Yu.A. Chesnokov, P.N. Chirkov, A.A. Durum, M.Yu. Kostin, A.V. Lutchev, V.A. Maisheev, A.A. Yanovich, A.V. Shchagin, V.I. Truten', V.B. Ganenko, I.V. Kirillin, N.F. Shul'ga, A.S. Kubankin, N.N. Nasonov, A.P. Potylitsyn, A.S. Gogolev, S.R. Uglov, Yu.M. Cherepennikov, P. Karataev. Observation of parametric x-ray radiation excited by 50 GeV protons and identification of background radiation origin // Problems of Atomic Science and Technology, Series "Plasma electronics and new methods of acceleration" №4(86) (2013) 315-319.

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