

Method of Diagnostics of Electron Beams of Femto-, Attosecond Duration

V.G.Kiziridi¹, A.S.Gogolev, N.A.Filatov, S.G.Chistyakov

National Research Tomsk Polytechnic University, Tomsk, Russia

For the first time, the use of a sampling calorimeter for recording short high-power X-ray pulses was proposed. Studies of the counting characteristics of the prototype on a monochromatic beam from a laboratory setup based on an X-ray tube with a wave dispersion attachment were carried out. Radiation with an energy of 20 keV is incident on a detector assembled from alternating layers of B-418 and Al scintillator, the thickness of each layer is 1 mm. According to the simulation results, the device allows you to register X-ray pulses with an intensity from 10^4 to 10^{20} quanta per second. The results of the experiment are compared with the results of modeling in GEANT4.

¹ Corresponding author: lericvalerik@gmail.com