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COSMIC RELIC ANTINEUTRINOS AS UNIQUE TOOL FOR DETERMINATION OF MAGNITUDE OF INTERNAL ELECTRIC FIELD INTENSITY VECTOR OF SINGLE CRYSTAL

Abstract

Using the elastic scattering of relic antineutrinos by the electrons accelerated up to energies of several hundred GeV that pass through the single crystals possessing a strong internal electrostatic field we propose a new method for determining the magnitude of the internal electric field intensity vector of some single crystals (eg, tungsten, diamond). We have determined that the third component of the momentum of the electron in the final state depends on the magnitude of the internal electric field intensity vector of the single crystal. By measuring the average value of the third component of the electron in the final state and using the formula obtained by means of the inverse problem method it is realistic to determine the magnitude of the internal electric field intensity vector of the single crystal.