On Computer Modelling of Primary Transducers in Electron Radiation Diagnostics*,

S.P. KARASYOV, S.V. MARYOKHIN, V.L. UVAROV, NSC KIPT, Kharkov, Ukraine; I.I. TSVETKOV, Mendeleyev institute of Metrology, St.Petersburg, Russia - Determination of transformation coefficient of primary measuring transducer of ionizing radiation is one of complicated problems in metrology as well as estimation of systematic error of measurement. As a possible approach for its solution authors suggested a method of computer modelling of radiation-transducer interaction processes. Electron radiation is described through its spacial and energetic characteristics, transducer is set by means of its real geometrical parameters and elemental content. Elaborated in CERN code GEANT for modelling of high-energy radiation-detector interaction seems to be very promising within such approach. Report contents the results of GEANT based analysis of two Faraday cup type transducers for electron energy range 1...50, MeV and demonstrates an employment of computer modelling in processing of pulsed signals of Rogovski coil type transducers as well.

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