Radiation Situation Around 160 keV X-Ray Source

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Abstract. This paper presents the results of simulations concerning the radiation situation in and around the laboratory at FEI STU. These simulations focus on the X-ray source, which will be useful in future R&D activities. The purchased X-ray source is the SMART EVO 160D with a maximum photon energy of 160 keV and uses a tungsten target. The model for the simulation was modelled in the SCALE 6.2 system and radiation doses were calculated using the MAVRIC sequence and variation reduction methods. The assumed energy of emitted photons is based on a tungsten anode energy spectrum. A discussion of the model specifications and the employed simplifications is provided.