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PAPER TITLE

Dose calculations by electron transport Monte Carlo simulation using ELSIM computer codes package

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ABSTRACT (See instructions overleaf)

For the purpose of solving electron transport problems by Monte Carlo simulation, a computer codes package was develloped (ELSIM). ELSIM is based on condensed history Monte Carlo algorithm. In order to get reliable results over a wide range of electrons energies, a variety of electron transport techniques was implemented like: Molière and Goudsmit-Saunderson multiscatter angle distributions, Blunk-Leisegang multiscatter energy distribution, sampling of electron-electron and bremsstrahlung individual interactions. Also are included path-length and lateral displacement corrections algorithms and a module for computing collision, radiative and total restricted stopping powers and ranges of electrons. Each component was tested and rezults obtained with different techniques was compared. Also is presented the solving of some typical electron transport problems which apear in radioprotection and dosimetry.