

عنوان مقاله:

Calculation of Absorbed Glandular Dose using a FORTRAN Program Based on Monte Carlo X-ray Spectra in Mammography

محل انتشار:

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خلاصه مقاله:

Introduction: Average glandular dose calculation in mammography with Mo-Rh target-filter and dose calculation for different situations is accurate and fast. Material and Methods: In this research, first of all, x-ray spectra of a Mo target bombarded by a 28 keV electron beam with and without a Rh filter were calculated using the MCNP code. Then, we used the Sobol-Wu parameters to write a FORTRAN code to calculate average glandular dose. Results: Average glandular dose variation was calculated against the voltage of the mammographic x-ray tube for d = 5 cm, HVL= 0.35 mm AI, and different value of g. Also, the results related to average glandular absorbed dose variation per unit roentgen radiation against the glandular fraction of breast tissue for kV = 28 and HVL = 0.400 mmAl and different values of d are presented. Finally, average glandular dose against d for g = 60% and three values of kV (23, 27, 35 kV) with corresponding HVLs have been calculated. Discussion and Conclusion: The absorbed dose computational program is accurate, complete, fast and user friendly. This program can be used for optimization of exposure dose in .mammography. Also, the results of this research are in good agreement with the computational results of others

كلمات كليدى: Glandular Absorbed Dose, Mammography, Mo-Rh Target-Filter Mammograms, Sobol-Wu Parameters

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