DEVELOPMENT OF NEW METHODOLOGY FOR DOSE CALCULATION IN PHOTOGRAPHIC DOSIMETRY

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A new methodology for equivalent dose calculation has been developed at IPEN-CNEN/SP to be applied at the Photographic Dosimetry Laboratory using artificial intelligence techniques by means of neural network. The research was orientated towards the optimization of the whole set of parameters involved in the film processing going from the irradiation in order to obtain the calibration curve up to the optical density readings. The learning of the neural network was performed by taking the readings of optical density from calibration curve as input and the effective energy and equivalent dose as output. The obtained results in the intercomparison show an excellent agreement with the actual values of dose and energy given by the National Metrology Laboratory of Ionizing Radiation.

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