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Correlated uncertainties estimate to performance tests of activimeters

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Activimeters must be submitted to performance tests to verify yours functionality according to the techniques and regulations. This study verified the correlation between two methodologies for a measurement of the independent quantities, as background radiation and accuracy in tests carried out with three activimeters, comparing the results with measurement value of a certified reference source. The methodology was based on the protocols indicated in the technical document of the International Atomic Energy Agency and within the normative limits adopted by the Brazilian legislation. As independent quantities background radiation and accuracy were correlated with a true correlation coefficient, allowing an estimation of their associated uncertainties. Through a study on the variation in methodologies, it can influence the result of the measurement, besides presenting a way of calculating a standardized combined uncertainty considering the correlation.

Biography

Giovane de Jesus Teixeira has completed his master degree at the age of 33 years from Radioprotection and Dosimetry Institute (IRD/CNEN) and now is completing his PhD at the same institute. He is coordinator of the school of radiology of Estácio de Sá University, the largest school of radiology technologists in Brazil. He is public server of the Rio de Janeiro State University and a Radiation Protection Supervisor qualified by the National Nuclear Energy Commission (CNEN). Nowadays develops research in the area of uncertainties in the National Laboratory for the Metrology of Ionizing Radiation (LNMRI/IRD/CNEN).

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