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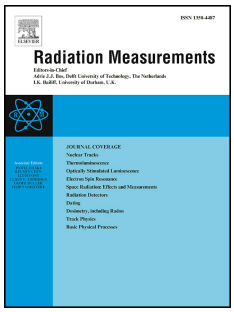

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N. Dinar, F. Pozzi, M. Silari, P. Puzo, S. Chiriotti, M. De Saint-Hubert, F. Vanhavere, O. Van Hoey, G.M. Orchard, A.J. Waker

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Instrument intercomparison in the high-energy field at the CERN-EU Reference Field (CERF) facility and comparison with the 2017 FLUKA simulations

N. Dinar[1,2 *], F. Pozzi[1], M. Silari[1], P. Puzo[2], S. Chiriotti [3], M. De Saint-Hubert[3], F. Vanhavere[3], O. Van Hoey[3], G.M. Orchard[4], A.J. Waker[4]

(1) CERN, 1211 Geneva 23, Switzerland

(2) LAL,Univ.Paris-Sud, CNRS/IN2P3,Universite Paris-Saclay,Orsay, France

(3) Institute for Environment, Health and Safety, Belgian Nuclear Research Center (SCK•CEN), Mol, Belgium

(4) Faculty of Energy Systems and Nuclear Science, University of Ontario Institute of Technology, Oshawa, Ontario, Canada

Abstract

This paper discusses an instrument intercomparison performed in the high-energy field at the CERF facility at CERN between 2015 and 2017 (October 2015, May 2016, November 2016 and June 2017). Measurements were performed in several reference exposure locations with the CERN extended-range Bonner Sphere Spectrometer (BSS), a Berthold LB4611, the LINUS rem counter from CERN, the LUPIN rem counter from ELSE Nuclear, the FHT 762 Wide Energy Neutron Detection Instrument (WENDI-II) from Thermo Scientific, the LUDLUM MODEL 42-41 PRESCILA NEUTRON PROBE and two models of Tissue-equivalent proportional counters (TEPCs) from Far West Technologies. All results are compared with the latest FLUKA reference values from simulations performed in 2017.

Keywords

High-energy, neutron H*(10), intercomparison, FLUKA, rem counters, Bonner Sphere Spectrometer, TEPC, microdosimetry

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