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In-Situ Measurements of Electric, Magnetic and Electromagnetic Fields in the Environment

Branislav D. Vulevic [1]

1. PC Nuclear Facilities of Serbia

Corresponding author: Branislav D. Vulevic, banevul@gmail.com

Categories: Environmental Health
Keywords:

How to cite this poster
Vulevic B D (2012) In-Situ Measurements of Electric, Magnetic and Electromagnetic Fields in the Environment. Cureus 4(10): e435.

Abstract

With regard to electromagnetic fields (EMF) protection, the relationship between exposure to EMF and health is controversial. A variety of epidemiological studies have suggested that EMF, over virtually all the frequency spectrum (0 Hz – 300 GHz), might be a risk factor for several health endpoints, including cancer and neurodegenerative disease. These associations are not explained by any confirmed biological mechanisms, and there are doubts as to their causal nature, as the available evidence is inadequate to make sound scientific conclusions. Previous research of electric, magnetic and electromagnetic fields (up to 300 GHz) in the environment, conducted by the authorities around the world, showed dramatically smaller amounts than those currently effective as reference levels recommended in International Commission on Non-Ionizing Radiation Protection Guidelines (ICNIRP). However, with the development of new measurement methods comes up the question for great many problems to be solved by the contemporary science. Based on the experiences gained in developed countries and the results of broadband measurements of electric and magnetic fields in the vicinity of the most numerous artificial sources of electromagnetic fields (transformer substations, power lines, GSM base stations of commercial mobile telephony, radio and TV transmitters) in the environment, the objective of this work is to circumscribe the basis of in-situ measurements and so contribute to the development of non-ionizing radiation protection in Serbia.

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Published 10/12/2012

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