

Documents

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Levels of extremely low-frequency electric and magnetic fields from overhead power lines in the outdoor environment of Ramallah city-Palestine

(2018) *Radiation Protection Dosimetry*, 179 (3), pp. 229-232.

DOI: 10.1093/rpd/ncx259

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Abstract

In this study, levels of extremely low-frequency electric and magnetic fields originated from overhead power lines were investigated in the outdoor environment in Ramallah city, Palestine. Spot measurements were applied to record fields intensities over 6-min period. The Spectrum Analyzer NF-5035 was used to perform measurements at 1 m above ground level and directly underneath 40 randomly selected power lines distributed fairly within the city. Levels of electric fields varied depending on the line's category (power line, transformer or distributor), a minimum mean electric field of 3.9 V/m was found under a distributor line, and a maximum of 769.4 V/m under a high-voltage power line (66 kV). However, results of electric fields showed a log-normal distribution with the geometric mean and the geometric standard deviation of 35.9 and 2.8 V/m, respectively. Magnetic fields measured at power lines, on contrast, were not log-normally distributed; the minimum and maximum mean magnetic fields under power lines were 0.89 and 3.5 μ T, respectively. As a result, none of the measured fields exceeded the ICNIRP's guidelines recommended for general public exposures to extremely low-frequency fields. © The Author(s) 2017. Published by Oxford University Press. All rights reserved.

Publisher: Oxford University Press

ISSN: 01448420

CODEN: RPDOD

PubMed ID: 29165647