Abstracts

Electric fields induced in cells in the bodies of amateur radio operators by their transmitting antennas

R.W.P. King. "Electric fields induced in cells in the bodies of amateur radio operators by their transmitting antennas." 2000 Transactions on Microwave Theory and Techniques 48.11 (Nov. 2000, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 2155-2158.

In this paper, an analytical study is made to determine the electric field induced in cells in the bodies of amateur radio operators by radiation from their respective transmitting antennas. Three types of antennas are considered and the electric field from each in the transmitting room of the operator is calculated. The electric field induced in the bodies of the operators is obtained with a cylindrical approximation of the body. The electric field induced in a cell in the central cross section of the body at f=60 MHz when the antenna radiates 1 kW is found to be as high as 50 V/m when the cell is near the surface. Due to skin effect, the field is much smaller in the interior of the body.

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