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A CONTRIBUTION TO THE ANALYSIS OF THE INFLUENCES OF ELECTROMAGNETIC FIELD FROM TRANSMISSION LINES AND ELECTRICAL DEVICES ON HUMAN

ABSTRACT

In this paper, a method for determination of influences on human exposed on low frequency electromagnetic field is presented. During the determination of these influences, finding the field in the human is from specific and great importance. Taking account the complex human structure, in means of his geometric structure and complexity of the electrical tissue characteristics, one way for his presentation is given in this paper. Here, the boundary surfaces between the regions with different characteristics are described with triangles. During the presented procedure developing, the influence from the other regions is equivalented with surface electric and magnetic currents. Taking account the characteristics of the triangles as geometric figures, the used method has no specific limitations due to geometric characteristics of the structure. Analyzed low frequency electromagnetic field comes from transmission line or electric device. The human model described with triangles, which in this approximation is rather rough, is more that sufficient for the main purpose, a method developing for field determination. The results, which are got, are basis for discussion for biological effects on human exposed on low frequency electromagnetic field.

Keywords: electromagnetic field, electromagnetic influence, induced electrical field, approximation of currents and charges, SAR.