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SPHERICAL MODEL OF THE HUMAN HEAD EXPOSED TO ELECTROMAGNETIC FIELD

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Abstract

In the present paper, the field quantities as the induced current (I_2), the current density (J_2), and the induced electric field (E_2) for the case of humans exposed to an external electromagnetic field were determined via different analytical methods. To study these induced field quantities, the spherical model of the human head was used for two frequencies domains – low and high frequencies. The values of the current density determined by analytical methods are compared with those obtained by numerical simulation using adequate electromagnetic field analysis software such as the CST Studio Suite and COMSOL Multiphysics.

Key words: analytical method, field quantities, numerical simulation, spherical model

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