Abstracts

Numerical computation of the EM coupling between a circular loop antenna and a full-scale human-body model

W.-T. Chen and H.-R. Chuang. "Numerical computation of the EM coupling between a circular loop antenna and a full-scale human-body model." 1998 Transactions on Microwave Theory and Techniques 46.10 (Oct. 1998, Part I [T-MTT]): 1516-1520.

This paper presents numerical computation of the electro-magnetic (EM) coupling between circular loop antennas and a full-scale human-body model. The loop antenna can be x-, y-, or z-oriented. Coupled integral equations (CIE's) and the method of moments (MoM) are employed to numerically solve this antenna-body-coupling problem. Numerical results of the antenna radiation characteristics influenced by the human body and the body-absorption rate from 50 to 400 MHz are presented. The applications of this study include assessment of a radio-frequency (RF) dose from a loop antenna and the body effect on the performance of the loop antenna used in personal communication devices such as radio pagers.

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