Abstracts

Long-Wavelength Electromagnetic Power Absorption in Prolate Spheroidal Models of Man and Animals

C.C. Johnson, C.H. Durney and H. Massoudi. "Long-Wavelength Electromagnetic Power Absorption in Prolate Spheroidal Models of Man and Animals." 1975 Transactions on Microwave Theory and Techniques 23.9 (Sep. 1975 [T-MTT]): 739-747.

A previously developed electromagnetic (EM) field perturbation analysis is used to calculate the electric fields in tissue prolate spheroids irradiated by plane waves with long wavelength compared to the spheroid dimensions. This theory is applied to prolate spheroid models of man and animals to obtain internal electric field strength, absorbed power distribution, and total absorbed power. These data are of value in estimating tissue EM power absorption in experimental animals and man. The theory may be used to help extrapolate animal biological effects data to man, and as a guide to establishing an EM radiation safety standard.

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