Abstracts

Near-Field Absorption Characteristics of Biological Models in the Resonance Frequency Range (Short Papers)

M.F. Iskander, S.C. Olson and J.F. McCalmont. "Near-Field Absorption Characteristics of Biological Models in the Resonance Frequency Range (Short Papers)." 1987 Transactions on Microwave Theory and Techniques 35.8 (Aug. 1987 [T-MTT]): 776-780.

In this paper, we utilized the new iterative extended boundary condition method (IEBCM) to calculate the near-field absorption characteristics of a spheroidal model of man in the resonance frequency range. These calculations complement our previous near-field results in the preresonance frequency range. Calculations were made for simple sources such as an electric dipole and a small current loop antenna. The near fields of these sources are known exactly and hence helped in explaining the absorption results in terms of the field components of the incident radiation. Numerical results for the normalized average SAR values are presented as a function of frequency for different near-field separation distances from the sources. It is generally observed that while the far-field results converge to the plane wave values, different near-field absorption characteristics occur for the two different sources. It was possible in both cases to explain the differences in the near-field average SAR values in terms of the incident near fields from the sources.

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