# Abstracts

## Interaction of the Near-Zone Fields of a Slot on a Conducting Sphere with a Spherical Model of Man

*S.-G. Zhu, K.-M. Chen and H.-R. Chuang. "Interaction of the Near-Zone Fields of a Slot on a Conducting Sphere with a Spherical Model of Man." 1984 Transactions on Microwave Theory and Techniques 32.8 (Aug. 1984 [T-MTT] (Special Issue on Electromagnetic-Wave Interactions with Biological Systems)): 784-795.*

We consider the geometry of a lossy dielectric sphere, simulating a human body, placed in the proximity of a conducting sphere with a radiating slot, simulating a leaking microwave oven. An exact solution is obtained for this idealized problem by using two spherical coordinate systems and employing the addition theorem to translate the vector spherical harmonics between the coordinate systems. Multiple scattering of the EM wave between the two spheres are determined by solving the boundary value problems iteratively. An extensive numerical computation has been conducted to determine the induced SAR in the dielectric sphere, and the body-source coupling effect was evaluated. It was found that a serious error in the SAR estimation can be caused if the body-source coupling is neglected, a common approximation used in most of the existing studies on the subject.

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