Abstracts

Responses of Electric-Field Probes Near a Cylindrical Model of the Human Body

D. Misra and K.-M. Chen. "Responses of Electric-Field Probes Near a Cylindrical Model of the Human Body." 1985 Transactions on Microwave Theory and Techniques 33.6 (Jun. 1985 [T-MTT]): 447-452.

A theoretical and experimental study on the response of an E-field probe near a cylindrical model of the human body has been conducted. The body is simulated with a long cylindrical dielectric shell filled with saline water, and a single E-field probe oriented in various directions, or an orthogonal probe is heated near its surface. The model with the probe is illuminated by a TE or TM plane EM wave. The response of the probe was found to be strongly dependent on the probe location with respect to the direction of the incident EM wave, the probe separation from the model surface, the probe orientation and the polarization of the incident EM wave. The effect due to the dielectric shell on the probe response, with and without the presence of saline water, was carefully investigated. In all cases, the agreement between theory and experiment was found to be very good.

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