Abstracts

Experimental and Theoretical Studies on Electromagnetic Fields Induced Inside Finite Biological Bodies (Comments)

H.I. Bassen and A. Cheung. "Experimental and Theoretical Studies on Electromagnetic Fields Induced Inside Finite Biological Bodies (Comments)." 1977 Transactions on Microwave Theory and Techniques 25.7 (Jul. 1977 [T-MTT]): 623-624.

The above paper states unequivocally: "When a probe is immersed in a finite biological body to measure the induced electric field, the output of the probe becomes location dependent, especially at the edge of the body." This statement is only true for an electrically large dipole antenna with a relatively low impedance detector as a load. We have developed a set of probe design criteria for implantable electric field probes. These criteria have been applied to produce a miniature isotropic probe which is neither location dependent nor calibration dependent with respect to the dielectric properties of the surrounding media. This calibration independence is analyzed as a function of dipole insulation thickness by Smith.

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