

Conditions of Strongest Electromagnetic Power Deposition in Man and Animals

O.P. Gandhi. "Conditions of Strongest Electromagnetic Power Deposition in Man and Animals." 1975 Transactions on Microwave Theory and Techniques 23.12 (Dec. 1975 [T-MTT] (1975 Symposium Issue)): 1021-1029.

Strongest power deposition for biological bodies is found for fields polarized along the longest dimension for frequencies such that the major length is about 0.4 times the free-space wavelength of radiation. Peak absorption in the presence of ground effects is observed at frequencies about one-half as much as for bodies isolated in free space. At resonance, an effective absorption area 34 times the shadow cross section is measured. Using biological-phantom figurines of the human body, distribution of power absorption is determined. Maximum power deposition is observed for the neck region. Initial experiments with anesthetized and dead rats have confirmed this observation.

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