Abstracts

On the penetration of the longitudinal component of EM fields into metals

R.I. Tzontchev, A.E. Chubykalo, J.M. Rivera-Juarez and V. Onoochin. "On the penetration of the longitudinal component of EM fields into metals." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1225-1228 vol.2.

The penetration of an EM wave with the frequency of 14 MHz through metallic shields of different design has been investigated. Despite for a normally incident wave the theory predicts the decay of the signal E/sub out//E/sub in/<0.01 (i.e. less -40 dBWt) for the shields used in the experiments, the decay of the measured signal was no less than -1.2 dB, i.e. anomalously large penetration of the signal through the metallic layer was detected. This effect can be caused by suppressing the magnetic component in the incident EM wave.

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