

Abstracts

Diffusion Equation Representation of Photon Migration in Tissue

M.S. Patterson, S.J. Madsen, J.D. Moulton and B.C. Wilson. "Diffusion Equation Representation of Photon Migration in Tissue." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 905-908.

A time dependent diffusion model of photon migration in tissue is used to develop analytic expansions for the diffusely reflected pulse detected some distance from a delta function input. Particular attention is paid to the nature of the boundary between the tissue and the surrounding non-scattering medium, and it is shown that the pulse shape is relatively insensitive to the nature of this boundary. Monte Carlo simulation and experimental results are presented which confirm the accuracy of the diffusion model.

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