

COLLOQUIUM

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11:00 – 11:45

The Meeting Room, Building 108
Optics and Plasma Research Department
Risø National Laboratory
DK-4000 Roskilde

Modelling the Light Propagation of Biological Tissue with Consideration of its Microstructure

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Abstract

The development of accurate light propagation models is a prerequisite for the successful application of new optical diagnostic tools. Up to now, mainly two theoretical models, namely the diffusion and the transport theory, have been used. Both are macroscopic theories, that view light as classical particles e.g. a stream of photons. Yet, the exact theory for light propagation is Maxwell's equations, which would have to be solved for the given spatial distribution of refractive indices, the scattering geometry. This talk will discuss the circumstances in which the present theories have to be extended and how this could be achieved by relating the microstructure to light propagation problems of biological and model systems.

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