



Universidade Federal da Paraíba
Centro de Ciências Exatas e da Natureza
Programa de Pós-Graduação *Stricto Sensu* em Física

*A Profa. Yerece Rosa, Diretora do CCEN, convida os
professores e alunos do Departamento de Física para a*

Aula Magna

de início do ano letivo no CCEN.

“Controlling light in complex media: Looking around corners and through turbid layers”

RESUMO: The propagation of light in inhomogeneous media, such as biological tissues and turbulent atmosphere, results in wavefront distortion and scattering, which imposes a major limitation in many applications. Examples range from microscopy and nanosurgery to astronomy. In addition to the frequently encountered spatial distortions, multiple-scattering also randomly distorts the polarization state of the incident light, and its temporal and spectral characteristics. However, although multiple-scattering is a random process, it is a deterministic one and it can be undone. I shall show how using a single spatial light modulator (SLM) one can control and correct the spatial, temporal, spectral and polarization distortions in random media, and demonstrate our scheme applicability for spatiotemporal focusing of femtosecond pulses through biological tissues, and for real-time imaging ‘around corners’ and through scattering layers.

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Auditório do DBM