



Centre de Nanosciences et de Nanotechnologies

Séminaire

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11 h

C2N, Site Marcoussis Salle R. Planel

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“ From Negative Index Metamaterials to Topological Light Sources “

Abstract

During the last two decades, our ability to nanostructure materials has led to a better understanding of the role of electromagnetic multipoles in the control of light-matter interaction. In this talk, I will discuss how symmetry consideration have enabled the construction of negative index metamaterials from closed metallic nanorings, the analogue of the Bohr model of atoms (previously deemed impossible). I will also discuss how symmetries, via the control of the interaction of electromagnetic multipoles, enable the construction of unique cavities supporting lasing using bound states in continuum with numerous potential applications. I will discuss the topology of these states, their experimental observation as well as the prospect to implement non-reciprocity, a long searched functionality in optical systems in magnetized and functional topological optical cavities of arbitrary geometries.

