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2D Photonic Crystal Bandstructures DEWAN WOODS, Purdue University — The understanding of the nature of light and matter interactions at the interface of novel and exotic materials such as Metamaterials (MMs), Topological Insulators(TIs), and photonic crystals are essential for the continued growth of condensed matter physics and quantum photonics. Much research effort is being made to engineer and enable the ability to tune the optical parameters of such materials, which in turn will tailor their electromagnetic response and thus allow for a better understanding of the photon, giving rise to interesting optical phenomenon in the process. In this theory-based talk, 2D photonic bandstructure-engineering will be investigated. Topological effects in these materials will also be examined.

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