Control of exceptional points in photonic crystal slabs

Various ways of controlling the extent of the ring of exceptional points in photonic crystal slabs are investigated. The extent of the ring in photonic crystal slabs is found to vary with the thickness of the slab. This enables recovery of Dirac cones in open, non-Hermitian systems, such as a photonic crystal slab. In this case, all three bands exhibit a bound state in the continuum in close proximity of the Γ point. These results may lead to new designs of small photonic-crystal-based lasers exhibiting high-quality factors.

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