Topology of multifold exceptional points

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Abstract

In this poster I will present some recent work on classifying multifold exceptional points, where more than two bands are degenerate at a point in parameter space. Such points have topological properties such as charge cancellation. In (1) Delplace et. al. introduces a topological invariant for threefold exceptional points in non-Hermitian systems with PT-symmetry. In paper (2) and (3) we generalizes the topological invariant to multifold exceptional points of all orders, and to systems in other symmetry classes.

(1) *Phys.Rev.Lett.* 127 (2021) 186602, Pierre Delplace(ENS, Lyon, Lab. Phys.), Tsuneya Yoshida(Tsukuba U.), Yasuhiro Hatsugai(Tsukuba U.) (2) *Phys.Rev.Res.* 7 (2025) 1, L012021, Tsuneya Yoshida, J. Lukas K. König, Lukas Rødland, Emil J. Bergholtz, Marcus Stålhammar (3) *Phys.Rev.Res.* 7 (2025) 3, 033246, Marcus Stålhammar, Lukas Rødland

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