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Parity-Time and other Symmetries in Optics and Photonics

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Title: Parity-Time and other Symmetries in Optics and Photonics
Abstract: The prospect of judiciously utilizing both optical gain and loss has been recently suggested as a means to control the flow of light. This proposition makes use of some newly developed concepts based on non-Hermiticity and parity-time (PT) symmetry-ideas first conceived within quantum field theories. By harnessing such notions, recent works indicate that novel synthetic structures and devices with counter-intuitive properties can be realized, potentially enabling new possibilities in the field of optics and integrated photonics. Non-Hermitian degeneracies, also known as exceptional points (EPs), have also emerged as a new paradigm for engineering the response of optical systems. In this talk, we provide an overview of recent developments in this newly emerging field. The use of other type symmetries in photonics will be also discussed.

Content of the contribution

Both

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