Unmasking PT Symmetry

Carl M. Bender
Washington University in St Louis
Wednesday, 28 October 2020, 4:00pm EDT

Abstract

The theory of complex variables is extremely useful because it helps to explain the mathematical behavior of functions of a real variable. Complex variable theory also provides insight into the nature of physical theories. For example, it provides a simple and beautiful picture of quantization and it explains the underlying reason for the divergence of perturbation theory. Complex-variable methods allow one to extend conventional Hermitian quantum theories into the complex domain. The result is a new class of parity-time-symmetric (PT-symmetric) theories whose remarkable physical properties have been studied and verified in many recent laboratory experiments.