

Study of Anti-Parity-Time Symmetric Regime of the Four-Wave Mixing in thermal Rb Vapor

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This work investigates the prospective realization of an anti-PT symmetric system via nonlinear optical four-wave mixing interaction in a thermal vapor of Rb atoms. We demonstrate that the anti-PT Hamiltonian governing the propagation of two conjugate optical fields in a double- Λ scheme can be realized under realistic experimental conditions. We also measure intensity correlations between two generated optical fields and study two-mode squeezing characteristics around the exceptional point. Our experimental observations show good agreement with the numerical simulations.