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Dissipation-induced squeezing[1] GENTARO WATANABE, Asia Pacific Center for Theoretical Physics (APCTP), HARRI MÄKELÄ, UmeåUniversity —
We present a method to create phase- and number-squeezed states in two-mode Bose systems using dissipation. The effectiveness of this method is demonstrated by considering cold Bose gases trapped in a double-well potential. The extension of our formalism to an optical lattice gives control of the phase boundaries of the steady-state phase diagram, and we discover a new phase characterized by a non-zero condensate fraction and thermal-like particle number statistics. We also show how to perform amplitude squeezing for single-mode photons using dissipation.

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