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## **Abbreviations**

QIP- Quantum Information Processing

HBT- Hanbury Brown and Twiss

EPR – Einstein, Podolosky and Rosen

COM- Cavity Optomechanics

OMS- Optomechanical System

PPCS – Passive-Passive Cavity System

PACS – Passive-Active Cavity System

EOM- Equations of motion

HLE – Heisenberg-Langevin Equation

FTP- Forward transmission Profile

BRP – Backward Reflection Profile

FTR- Forward transmission Rate

BRR – Backward Reflection Rate

OB – Optical Bistability

OQS – Open Quantum System

DPT – Dynamical Phase Transition

HSG – Higher order Side band Generation

EP – Exceptional Point

MPCPN – Mean Passive Cavity Photon Number

WGM – Whispering-Gallery-Mode

PT-Symmetric – Parity-Time-Symmetric

QS – Quantum Systems

PD – Probability Distribution

FFT – Fast Fourier Transform

RWA – Rotating Wave Approximation