Cavity Quantum Electrodynamics with the Whispering Gallery Modes of Quartz Microspheres

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Cavity quantum electrodynamics in the strong coupling regime investigates dynamical processes for single atoms and photons. The whispering gallery modes of quartz microspheres have small mode volume \( V \sim 10^3 \text{ cm}^3 \) and high quality factors \( Q \sim 10^9 - 10^{10} \), making them very attractive systems for cavity QED in the optical domain.