

Abstract Submitted
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Single polariton optomechanics JUAN RESTREPO, CRISTIANO CIUTI, IVAN FAVERO, Universite Paris Diderot (paris 7) — We explore theoretically a hybrid quantum system combining cavity quantum electrodynamics and optomechanics[1]. We solve analytically the Hamiltonian of the system showing the nature of the dressed atom-cavity-mechanics polarons and study its dynamical behavior in presence of dissipation and finite temperature. In particular we study cooling to the ground state in the single-polariton regime and peculiar statistics for the mechanical resonator in this hybrid configuration. [1] J. Restrepo, C. Ciuti and I. Favero, (arXiv:1307.4282)

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