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Multiphoton Floquet exceptional points HOSSEIN JOOYA, Harvard - Smithsonian Center for Astrophysics, ADI PICK, NIMROD MOISEYEV, Technion-Israel Institute of Technology, HOSSEIN R. SADEGHPOUR, Harvard - Smithsonian Center for Astrophysics — Exceptional points (EPs) are special modal degeneracies in non-Hermitian systems, which have recently drawn a lot of interest due to their counter-intuitive optical properties. In this work, we explore the effects of EPs on multiphoton absorption in microwave-driven superconducting transmon qubits. Multiphoton transitions are modeled using a non-perturbative Fluoquet-Liouville supermatrix approach, which takes into account radiative damping via the density matrix formulation. EPs are found by controlling the power and frequency of the driving microwave field, and their effect on multiphoton-induced resonance fluorescence is demonstrated numerically.

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