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Observable most probable trajectories of quantum switching in modulated oscillator[1] VITTORIO PEANO, University Erlangen Nuernberg, MARK DYKMAN, Michigan State University — Quantum fluctuations lead to a finite width of the distribution of a modulated system over its quasienergy (Floquet) states even for zero temperature of the bath to which the system is coupled. We study the resulting distribution for a periodically modulated oscillator. Of special interest are large rare fluctuations responsible for the tail of the distribution over quasienergy and for switching between metastable states of forced vibrations. We find the most probable paths followed by the quasienergy in rare events, including switching. Along with the switching rates, such paths are observable characteristics of quantum fluctuations. As we show, they can change discontinuously once the detailed balance condition is broken. Knowledge of such paths suggests a new way of quantum control of rare events

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