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*Robust operations with dressed states*

Abstract: Pulsed dynamical decoupling has been proven to be a very effective method for prolonging the coherence times of quantum systems. Continuous decoupling, however, was considered to be less efficient. Recently a growing number of experiments have been conducted in which the coherence time of quantum systems was prolonged via continuous decoupling while performing a quantum gate or sensing a weak signal. In this talk I will review some of the experiments and the theoretical behind this effort.