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Quantum non-demolition and high-efficiency detection of traveling microwave photons - part 2 ARNE L. GRIMSMO, BAPTISTE ROYER, JRME BOURASSA, Univ of Sherbrooke, NICOLAS DIDIER, INRIA Paris, ALEXANDRE BLAIS, Univ of Sherbrooke — Most proposals for continuous-in-time single-photon detectors in the microwave regime are based on the photon being absorbed in some medium, which in turn is continuously monitored to detect any change in state signaling the arrival of a photon. A major obstacle to this approach, however, is that the more strongly the medium that is intended to capture the photon is measured, the less likely this medium is to change its state, thus prohibiting the photon from entering in the first place. This paradoxical behavior is an example of the quantum Zeno effect. In this talk I will discuss how the flexibility of quantum microwave circuits offer possibilities for photodetection with no direct analogs in the optical regime and, moreover, how this allows us to bypass the problematic Zeno effect.

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