

CMP Seminar
Michigan State University

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Measurement of Superconducting Qubits and Causality

A motivating theme of the talk is the causality principle in quantum mechanics: an experimenter's action can affect evolution of a distant object "back in time"; however, it cannot affect the ensemble-averaged evolution of this object (randomness saves causality). We will consider measurement of a superconducting qubit (transmon or Xmon), focusing on experimental details. This measurement is continuous (weak), so we will have to discuss the process of continuous collapse. A simple and more complicated theory of the continuous collapse will be considered for the superconducting qubits. We will also discuss experiments, realized in recent years, including the experiment illustrating quantum causality.

Monday, Sept. 21, 2015
4:10 PM
BPS 1400
Prof. Mark Dykman - Host