

Low Frequency Approximation for a class of Linear Quantum Systems using Cascade Cavity Realization

Ian R. Petersen

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This paper presents a method for approximating a class of complex transfer function matrices corresponding to physically realizable complex linear quantum systems. The class of linear quantum systems under consideration includes interconnections of passive optical components such as cavities, beam-splitters, phase-shifters and interferometers. This approximation method builds on a previous result for cascade realization and gives good approximations at low frequencies.

Subjects: **Systems and Control (cs.SY)**; Optimization and Control (math.OC); Quantum Physics (quant-ph)

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