

# DEMULTIPLEXING GENERALIZED INFORMATION VIA QUANTUM TRANSMISSION LINES

SEMINAR



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## Abstract

Demultiplexer is a key element in the modern computer architecture, enabling perfect routing of an input classical signal in a designated one among multiple output ports. Quantum transmission lines, having access to the quantum systems directly, are able to transmit both the classical and quantum information encoded in quantum systems. Therefore, with the rapid development towards the fruitful implementation of quantum computers, a natural question emerges that whether the scrambled classical and quantum information in a quantum system can be perfectly demultiplexed in the designated classical and quantum output ports? In this talk, we will investigate such a possibility, with the complete characterization of perfect quantum demultiplexers, their circuit implementations and setting the fundamental bounds over their demultiplexing strength.

*Everyone is invited to attend*

