

**SASS**

# Quantum Error-Correcting Codes: Shor's Algorithm

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**Time: 12:30pm**

**Wednesday, June 30**

**Location: Kavi Bldg. 3<sup>rd</sup> Floor Conf. Rm.**



Quantum computation and information algorithms are vulnerable to noise, particularly in the form of decoherence. Error correcting codes capable of accounting for decoherence must be used if these processes are to be reliable on a large scale. Shor's error-correcting code is useful in understanding how decoherence may be corrected, and leads indirectly to other error-correcting codes. Shor's code also leads to an understanding of how some decoherence is inevitable and what some origins of this decoherence may be in the presence of any code. Shor's code was then a precursor to the widely-studied and much more powerful set of Calderbank-Shor-Steaane codes.