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CMPT 409 assignment 1

Key points of two maximally entangled qubits and how they can be utilized in quantum computing and quantum information theory:

* When two qubits are maximally entangled, they can store all possible combinations of their values. (2 qubits can represent 4 different values) Comparatively, two traditional binary bits together would just store a single value. As you increase the number of entangled qubits, the number of values that can be represented using those qubits grows exponentially. (Slide 188 of pdf 1) This allows for the ability to use a practical number of qubits while producing powerful computation functionality.
* Entanglement: two particles are governed by one wave function. (Slide 193 of pdf 1)
* Entanglement violates the principle of locality. (Slide 158 of pdf 1)

Fundamental limitations:

Why can’t the violation of the Principle of Locality be used for superluminal communication:

# References: