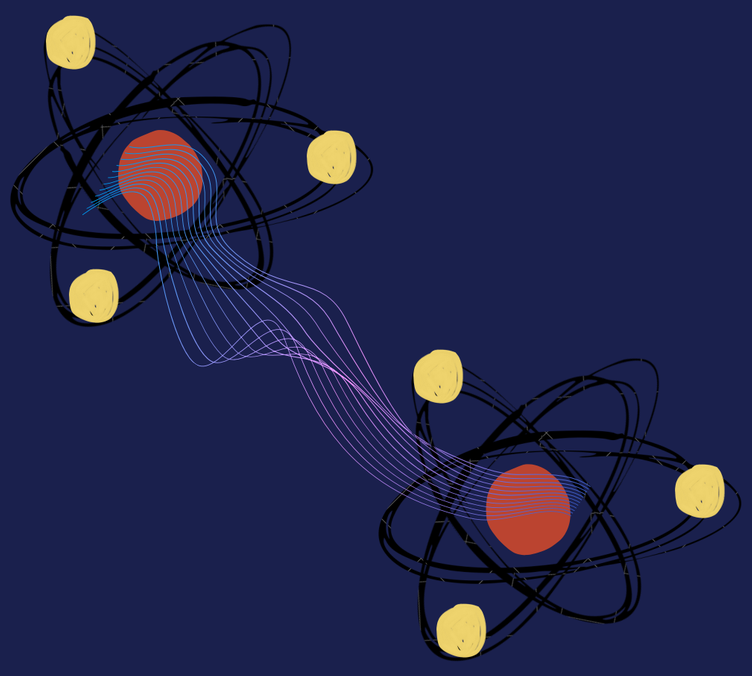
Jacob Cardinal Tremblay



Quantum Entanglement

Small

Quantum Mechanical properties apply to objects which are extremely small, typically atoms or smaller.

Spin

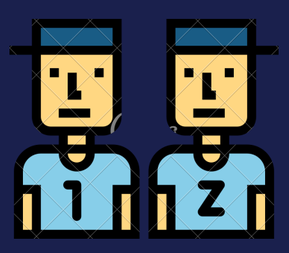
Quantum particals can have a "spin" which describes their state. They can be spin up, or spin down.

PArticle

Normally, two particles provide information about their state independent of the other (Wilczek, 1).

entangle

However, entangled particles provide knowledge about the other particle which means that "entangled particles behave together as a system in ways that cannot be explained using classical logic" (Fisher, 1).

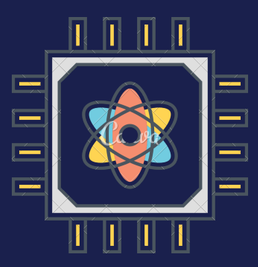


State

When 1 particle is measured in a certain state, we know the state of the other particle.

Distance

This even occurs when the state is measured across vast distances!



Compute

This idea is used in quantum computers to help solve some of the world's hardest problems! (Fang et al. 2003)

References:

Fang, A., & Chang, Y. C. (2003). Entanglement and correlation for identical particles in quantum computing. Elsevier, 311(6), 443-458. doi:10.1016/S0375-9601(03)00546-2

Fisher, C. (2021). *What is Quantum Computing?* IBM Quantum. https://www.ibm.com/quantum-computing/learn/what-is-quantum-computing/

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