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**Quantum Chess: Making Quantum Phenomena Accessible**

CHRISTOPHER CANTWELL, Univ of Southern California — Quantum phenomena have remained largely inaccessible to the general public. There tends to be a scare factor associated with the word “Quantum”. This is in large part due to the alien nature of phenomena such as superposition and entanglement. However, Quantum Computing is a very active area of research and one day we will have games that run on those quantum computers. Quantum phenomena such as superposition and entanglement will seem as normal as gravity. Is it possible to create such games today? Can we make games that are built on top of a realistic quantum simulation and introduce players of any background to quantum concepts in a fun and mentally stimulating way? One of the difficulties with any quantum simulation run on a classical computer is that the Hilbert space grows exponentially, making simulations of an appreciable size physically impossible due largely to memory restrictions. Here we will discuss the conception and development of Quantum Chess, and how to overcome some of the difficulties faced. We can then ask the question, “What’s next?” What are some of the difficulties Quantum Chess still faces, and what is the future of quantum games?

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