

NIST Quantum Speaker Series

Toward the Quantum World: A Journey into the Very Cold

Tuesday, April 29 2025, 6:30 pm



In this talk, we will embark on a journey into the realm of quantum mechanics, where the rules of everyday physics no longer apply. Central to this exploration is the concept of extreme cold—temperatures nearing absolute zero—where the strange and counterintuitive phenomena of quantum physics come to life. We will discuss and see cooling techniques to reach these frigid conditions, allowing us to manipulate atoms and molecules in ways that reveal their fundamental quantum behaviors. From super-states of matter to quantum entanglement, we'll explore how these near-absolute-zero environments provide a unique window into the quantum world, offering us new ways of sensing forces, measuring time, and delivering insights that could revolutionize technology, computation, and our understanding of the universe itself. Join us as we step into this extraordinary frontier of science, where the coldest temperatures reveal the hottest discoveries.

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This presentation is intended for a general audience.