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Quantum Mechanics: A Love Story

MAXIMILIAN SCHLOSSHAUER, Department of Physics, University of Portland

Physicist Steven Weinberg once said, “After you learn quantum mechanics, you’re never really the same again.” I became a physicist because of quantum mechanics. In this talk, I will tell you how I try to get to the bottom of what is so intriguing (and perhaps puzzling) about quantum mechanics. In particular, I will tell you about a new result that shows that whenever you jointly consider a pair of quantum systems, the whole is different from the sum of the parts. If there’s time, I’ll also mention experiments I have recently set up that vividly demonstrate phenomena at the heart of quantum mechanics. These are experiments that undergraduate students, and even a clumsy theoretical physicist like myself, can build on a shoestring budget.