

Zohreh Davoudi is an Associate Professor of Physics at the University of Maryland, a Fellow of the Joint Center for Quantum Information and Computer Science (QuICS), and the Associate Director for Education at the NSF Institute for Robust Quantum Simulation. Davoudi received her Ph.D. in 2014 from the University of Washington in Seattle, before joining Massachusetts Institute of Technology's Center for Theoretical Physics as a post-doctoral research associate. She was appointed to a faculty position at the Department of Physics at the University of Maryland in 2017. She was also a Fellow of the RIKEN research program from 2017-2020. Her work is recognized by a Wilson Award for Excellence in Lattice Gauge Theory, a Sloan Research Fellowship, a Department of Energy's Early Career Award, and a Simon's Emmy Noether Fellowship. She has organized numerous scientific workshops and programs and was a topical-group co-convener for Lattice Gauge Theory for the U.S. Particle Physics planning process (Snowmass2021). Davoudi is a theoretical nuclear physicist working at the intersection of Nuclear Physics, High Energy Physics, and Quantum Information Science. She applies classical- and quantum-simulation methods to find solutions to computationally challenging problems in her field. Davoudi's expertise is in lattice gauge theory, a theoretical and computational framework that enables first-principles simulations of matter from its fundamental constituents as described by the Standard Model of Particle Physics. In the Quantum-Information-Science world, she explores analog, digital, and hybrid approaches to simulating quantum field theories of Nature with a range of quantum-simulating and quantum-computing platforms, from trapped-ions to solid-state systems. Besides developing quantum algorithms for simulating gauge theories and engaging in experimental collaborations, she is interested in finding deeper connections between gauge theories and quantum entanglement, quantum information, and quantum thermodynamics.