



ICTP | International Centre for Theoretical Physics
SAIFR | South American Institute for Fundamental Research

Campus of IFT-UNESP – São Paulo, Brazil



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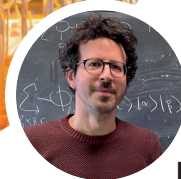
**SCHOOL ON QUANTUM
SIMULATION IN THE NISQ ERA**



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The ever-growing quest to simulate quantum many-body systems has recently gained unprecedented momentum, driven by breakthroughs in machine learning, quantum variational techniques, and advances in noisy intermediate-scale quantum (NISQ) devices. These new methodologies allow us to explore complex quantum phases, optimize control protocols, and probe far-from-equilibrium dynamics in ways previously deemed unattainable. At the interface of quantum computing, quantum matter, and artificial intelligence, these tools are now shaping the future of quantum simulation across various platforms, from ultracold atoms to solid-state devices.

This school brings together leading experts to provide participants with a comprehensive foundation in both the theoretical and practical aspects of quantum simulation in the NISQ era. We will combine both introductory but also a few advanced lectures, hands-on sessions, and discussions on the latest experimental and theoretical developments in quantum simulation, bridging the gap between condensed matter physics, quantum computation, and machine learning. The structure ensures a balance between fundamental concepts and cutting-edge ones, providing participants with the tools to contribute to this vibrant and interdisciplinary research area.

This school will be followed by the two-week 3rd Quantum Computing School from November 16-27.

Application deadline:

August 20, 2026

**Online application and
more information:**

ictp-saifr.org/sqsnisq2026



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