

Theory Colloquium

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“Which models, visualizations and experiments are suitable for education in the field of modern quantum technologies?”

Abstract

Due to the so-called second quantum revolution, the need for suitable concepts for teaching key ideas of modern quantum physics in the areas of quantum computing and simulation, quantum communication, sensor technology and metrology is increasing both at university level and in high school. In this talk, we give an overview of the wide range of activities in these fields - from mixed reality experiments on quantum communication, topological models for quantum entanglement and software-supported quantum simulations at university level, to low-cost experiments for schools, e.g. on NV- centers, the BB 84 protocol or the quantum eraser. Empirical data concerning learning efficiency are presented, which reveal the challenges in teaching and show at the same time the great need for further empirical surveys, in particular concerning the development of master's courses in quantum technologies.

Wednesday | 07.06.2023 | 17:00

SR 2 | ICT building