Doctoral Seminar

Graduate Research Training Group (GRK)

www.physik.uni-rostock.de/grk/



26th January 2023, 3:00 pm Vera Neef Experimental Solid-State Optics

Holonomic Quantum Computing

Using so called holonomies as computational units is a novel approach of quantum computing, that promises to increase stability and error resilience of quantum gates. I will give a short introduction into quantum computing – especially in integrated photonics – and try to lift the mystery that surrounds geometric phases and holonomies in particular by showing quantum optical realizations of different types of holonomies. The emphasis will be on how to use holonomies for quantum computing. In the end, I will show an (almost) useful quantum algorithm, that will make you always chose the right side for a coin flip.



Talk: English Slides: English **Location:** Great Lecture Hall, HS1, Institute for Physics, Albert-Einstein Str. 24

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