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To all members of the
Faculty of Physics

Vienna, 05 January 2017

Invitation to the public defense of the doctoral thesis

Single-Photon Experiments and Characterization of Superconducting Nanowire Single-Photon Detectors

by

Lorenzo Manuel Procopio Peña

Thursday, 12 January 2017, 09:00

Erwin-Schrödinger lecture hall, 5th floor, Boltzmannngasse 5, 1090 Vienna

Abstract

This thesis exploits individual single photons to investigate two important fields in quantum mechanics; namely, quantum foundations and quantum computation.

On the quantum foundation side, an experimental implementation to look for manifestations of quaternionic effects in quantum mechanics is built.

On the quantum computation side, the first application of an indefinite causal structure in quantum computing is demonstrated. In addition to these fields, installation, operation and characterization of superconductor nanowire single-photon detectors are presented.

These detection units are an essential ingredient for the scale-up of optical quantum information protocols

Defense committee:

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