UNIVERSIDAD COMPLUTENSE
MADRID

AVISO DE CONFERENCIA

A friendly introduction to quantum computation: Analog computers with Schrödinger's cats

Prof. Javier Rodríguez Laguna
Dpto Física Fundamental, UNED

Facultad de Informática
Sala de Grados • 7 de mayo de 2015 • 16:00
entrada libre hasta completar el aforo

resumen:

If the claims of D-Wave are correct, the first general purpose quantum computers are already here. How do they work? In this talk we will follow a pedestrian approach to quantum computation. We will travel back in time, to revisit the old fashioned analog computers, such as the spaghetti-sort or the soapy solution to the Steiner tree problem. Quantum adiabatic computation, the basic principle of the D-Wave device, is just an analog computer, but it profits from a spooky property of quantum mechanics called entanglement. In the last part of the talk we will address the (unanswered yet) question: what will be the real power of quantum computers, compared to classical ones?

sobre Javier Rodríguez:

Javier Rodriguez Laguna obtained a PhD in theoretical physics from Universidad Complutense de Madrid in 2002, with a thesis on numerical methods for quantum many-body systems. He has worked as a postdoc researcher at SISSA (Trieste), ICFO (Barcelona) and Universidad Carlos III de Madrid, among others, and currently works at UNED, in Madrid. His research interests span the interplay between computation and physics, both quantum and classical, quantum computation and simulators, non-equilibrium growth models, random geometry and disordered systems.