

Approaches to Quantum State Topography

Friday, November 17, 2023 at 11:00
Diego Maragnano | University of Pavia

Exploring high-dimensional quantum states is pivotal for understanding complex quantum systems and advancing quantum technologies. However, their implementation and characterization pose significant challenges. In this talk, I will deal with the problem of characterizing large quantum systems. To this end, quantum state tomography has emerged as a fundamental tool, but its main drawback, the curse of dimensionality, makes it impractical even for small quantum systems. I will first show some approaches developed over the years to make quantum state tomography more efficient. Finally, I will present some recent results on a novel approach, called *threshold quantum state tomography*, which can significantly reduce the number of measurements required to accurately reconstruct the density matrix of the state.

Disclaimer: The whole Trento academic community is invited to participate. However, since this space is dedicated to PhD students, we would like to maintain an informal and welcoming environment

General information:

The seminar will be held at ECT*, Villa Tambosi, Strada delle Tabarelle 286, Villazzano. We are going to have a coffee break!

To reach Villa Tambosi: take bus number 13 from Povo or bus number 6 from the city center. The bus stops is in front of the Villa. In order to organize the coffee break we kindly ask you to confirm your presence through the google form that you can find scanning the following QR code:



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