

PhD projects in “Quantum simulation and computation with near term quantum processors” in CQT Singapore

The positions are within the Quantum Optics and Quantum Simulators Group lead by Dr. Dimitris G. Angelakis in the Centre of Quantum Technologies (CQT) (<http://www.dimitrisangelakis.org>). The group perform research in quantum physics and quantum computation and simulation with near term quantum computers. Areas of current interest include digital and analog quantum computing and simulation, quantum machine learning, and applications of quantum computing in data science, optimization, chemistry, and finance problems.

The PhD projects will involve the **development and implementation of quantum algorithms in current or near future quantum processors**. The work will involve collaboration with leading worldwide experimental groups working in superconducting qubits, cold ions and nano-photonic systems. It will require analytical and numerical work combining quantum physics, quantum information as well as algorithm design and quantum machine learning approaches.

The candidates should have a solid undergraduate background in Physics. If from ECE or CS departments, a strong background in quantum physics at the undergraduate level is essential. They should be within the top 5% of students in their year. Experience in programming especially in numerics for simulating physical problems, will be a plus as also participation in international competitions such as Math or Physics Olympiads. Exposure in quantum information or machine learning at the level of an MSc course will also be an advantage.

We provide an excellent and motivating working environment with a strong team spirit. The group has ongoing collaborations with leading quantum hardware groups worldwide, other theory academic groups, as well as the industry sector. These PhD positions will be CQT based with opportunities to visit the corresponding collaborators' groups. The positions are fully funded and include travel funds and funds for buying a computer and books.

The positions are available as soon as possible and we accept applications until a suitable candidate is found. Inquiries should be first sent **by email to dimitris.angelakis-at-gmail.com** before applying via the official channel. They should contain a detailed CV, a one page motivation letter, one example of written work (report or paper) and the contact details (email) of three referees.

Group homepage: www.dimitrisangelakis.org