

Conference on Quantum Annealing/ Adiabatic Quantum Computation

5 - 6 October 2020
An ICTP Virtual Meeting
Trieste, Italy



Further information:
<http://indico.ictp.it/event/9119/>
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The virtual conference, *co-hosting the annual AQC2020 originally scheduled in June 2020*, will present recent progresses and perspectives in the field of adiabatic quantum computation. It will run continuously in 3 sessions over 2 days involving co-hosts in Italy, California, and Japan.

Description:

Adiabatic quantum computing and quantum annealing are promising technologies to be used in the near future quantum devices. The conference will deal with academic and basic research on these topics, with a broad focus, including quantum approximate optimization (QAOA) and other variational quantum approaches, and in close connection with the neighbouring fields of Quantum Simulations and Quantum Computation. It will bring together top-world experts in quantum technologies from different areas of condensed matter, photonics and atomic-and-molecular physics to discuss together their latest results and viewpoints.

The scientific focus will be on conceptual, theoretical, and experimental trends. The meeting will collect, as is well established in Trieste, the world community active in these fields, for fruitful encounters and exchanges, and with an intense mixing of theoretical, simulation and experimental experiences, including emerging countries, in line with the mission of ICTP.

Topics:

- Role of entanglement
- Role of dissipation
- Role of non-stoquasticity
- Quantum complexity
- Non-adiabatic quantum computing
- Variational quantum algorithms
- Counter-diabatic driving
- Theoretical and numerical models of adiabatic quantum computing
- Non-traditional quantum driving including inhomogeneous driving and reverse annealing
- Digitized quantum annealing
- Quantum machine learning

How to apply:

Online application:
<http://indico.ictp.it/event/9119/>

Female scientists are encouraged to apply.

Directors:

W. LECHNER, Institute for Quantum Optics and Quantum Information, Austria
H. NISHIMORI, Tokyo Institute of Technology, Japan
G. E. SANTORO, SISSA, Italy

Local Organizer:

A. SCARDICCHIO, ICTP, Italy

Workshop Speakers:

J. ATALAYA, University of California Berkeley, USA
Y. BANDO, Institute of Innovative Research, Tokyo Institute of Technology, Japan
L. BRADY, University of Maryland, USA
E. CROSSON, Physics Center for Quantum Information and Control University, USA
L. FRY-BOURIAUX, University College London, UK
Z. GONZALEZ IZQUIERDO, Universities Space Research Association, USA
A. HARTMANN, University of Innsbruck, Austria
M. HASTINGS, Microsoft Corporation, USA
M. KHERZI, University of Southern California, USA
A. KING, D-Wave Systems Inc., Canada
W. LECHNER, IQOQI, Austria
D. LIDAR, University of Southern California, USA
G. B. MBENG, University of Innsbruck, Austria
P. MCMAHON, Cornell University, USA
N. MOHSENI, MPI, USA
G. MOSSI, NASA, Ames, USA
M. MOTOMURA, Institute of Innovative Research, Tokyo Institute of Technology, Japan
J. MOZGUNOV, University of Southern California, USA
H. NISHIMORI, Tokyo Institute of Technology, Japan
E. RIEFFEL, NASA, USA
T. ROSENBAUM, Caltech, USA

Deadline:

28 September 2020

