

Curriculum Vitae

Personal information

Zaki Leghtas

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Date of birth: 25/12/1986

Nationality: Moroccan, French, British

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quantic.phys.ens.fr

Education

- 2020: Research Direction Habilitation
Ecole Normale Supérieure Paris
- 2009 – 2012: PhD : Quantum state engineering and stabilization (theory)
Mines Paris / INRIA Paris
Supervisors : Pierre Rouchon and Mazyar Mirrahimi
- 2006 – 2009: Masters of science and engineering, Mines Paris, Paris

Current positions

- Dec 2015 – : Professor at Mines Paris, Paris
Member of the Laboratoire de Physique de l'Ecole Normale Supérieure, Paris
Member of the QUANTIC team, INRIA, Paris

Previous position

- 2012 – 2015: Postdoctoral researcher in the group of Michel Devoret at Yale University.
Topic: Driven dissipative superconducting quantum circuits (experiments)

Grants

- 2022 - 2027 PEPR plan quantique 500 k€
- 2020 - 2025 ERC starting grant 1500 k€
- 2020 - 2023 Quanterra 300 k€
- 2018 - Sirteq 50 k€
- 2016 - 2019 EMERGENCE Ville de Paris 230 k€
- 2016 - 2020 ANR accueil chercheur haut niveau 400 k€

Supervision of graduate students and postdoctoral fellows

Students: • Adrien Bocquet • Erwan Rover'ch • Alvisè Borgognoni • Ulysse Réglade

• Marius Villiers (postdoc)

Alumni: • Camille Berdou • Clarke Smith (postdoc) • Raphaël Lescanne • Lucas Verney

Teaching activities

- 2018 – : Quantum information – graduate (30h / year)
- 2016 – 2021 : Quantum and statistical physics – graduate (15h / year)
- 2016 – 2018 : Quantum physics – undergraduate (30h / year)

Organization of scientific meetings

- Nov 2018 : Organizing committee for “International Conference on Quantum Computation”. ICoQC 2018. École Normale Supérieure, Paris, France.

Scientific boards and committees

- Scientific board of startup Alice&Bob
- Scientific committee of the quantum information center Sorbonne doctoral school

PhD defense committees

- 2023 : Jean-Damien Pillet, Ecole Polytechnique Paris. HDR.
- 2022: Catherine Leroux, Université de Sherbrooke. Invited by Alexandre Blais.
- 2022: Guiliam Butseraen, Institut Néel Grenoble. Invited by Julien Renard.
- 2021 : Daniel Garcia-Sanchez, INSP Paris. HDR.
- 2021 : Sébastien Leger, Institut Néel Grenoble. Invited by Nicholas Roch.
- 2020 : Mario Gely, TU Delft. Invited by Gary Steele.

- 2019 : Romain Albert, CEA Grenoble. Invited by Max Hofheinz.
- 2018 : Iivari Pietikäinen, University of Oulu. Invited by Erkki Thuneberg.

Invited seminars (recent selection)

- Hebrew University of Jerusalem. Invited by Alex Retzker (2023).
- Weizmann Institute. Invited by Fabien Lafont and Serge Rosenblum (2023).
- Institut Néel. Invited by Jérémie Viennot (2023).
- C2N. Invited by Rebeca Ribeiro-Palau (2023).
- Sorbonne Université. Invited by Julien Laurat (2022).
- LJLL. Invited by Emmanuel Trélat (2022).
- Journées X/ENS. Invited by Frédéric Chevy (2022).
- ENS. Invited by Carlo Sirtori (2022).
- ENSTA. Invited by Davide Boschetto (2022).
- IBM Qiskit, online. Invited by Zlatko Minev (2021).
- Ecole Polytechnique, France. Invited by Timothée Nicolas (2020).
- University of Oulu, Finland. Invited by Erkki Thuneberg (2018)
- University of Berkeley. Berkeley, USA. Invited by Irfan Siddiqi (2018)
- Rigetti Quantum Computing. Berkeley, USA. Invited by Chad Rigetti (2018)
- KIT, Karlsruhe, Germany. Invited by Ioan Pop (2016)
- Néel institute, Grenoble, France. Invited by Nicolas Roch (2016)
- SPEC, CEA Saclay, France. Invited by Daniel Esteve (2016)

Invited conferences (recent selection)

- Les Houches. France. Invited by Benjamin Sacépé (2023).
- Quantum innovation. Tokyo, online. Invited by Yutaka Tabuchi (2022).
- APS March meeting. Chicago, online. Invited by Arne Grimsmo (2022).
- Cargèse Méso School. Corsica. Invited by Benjamin Huard (2021).
- Neuromorphic meets quantum. C2N Palaiseau France. Invited by Danijela Markovic (2020).
- Byron Bay Quantum Workshop, online. Invited by Arne Grimsmo (2020).
- GDR mésoscopique. Aussois, France. Invited by Bernard Plaçais (2019).
- Quantum cavities. Jouvence, Canada. Invited by Alexandre Blais (2019).
- APS March meeting. Boston, USA. Invited by Blake Johnson (2019)
- ONE-QOS workshop. Max Planck, Erlangen, Germany. Invited by Florian Marquardt (2018)

- IHP workshop on quantum control and feedback, Paris, France. Invited by Eleni Diamanti (2018)
- LIA CNRS-Université de Sherbrooke workshop, Saint-Rémy, France. Invited by Denis Vion (2018)
- APS March meeting. San Antonio Texas, USA. Invited by Elliott Kapit (2015).

Major collaborations

- Clarke Smith at Google, USA, (protected qubits)
- Benoit Douçot at UPMC, France, (protected qubits)
- Raphaël Lescanne at Alice&Bob, France, (quantum computing)
- Mazyar Mirrahimi, Alain Sarlette and Philippe Camapagne-Ibarcq at INRIA Paris, France, (quantum error correction)
- Pierre Rouchon and Alexandru Petrescu at Mines Paris, France, (quantum control)
- Takis Kontos, Matthieu Delbecq and Audrey Cottet at ENS Paris, France, (spin qubits in carbon nanotubes)
- Samuel Deléglise at LKB ENS Paris, France, (optomechanics)
- Emmanuel Flurin at CEA Saclay, France, (microwave photodetection)
- Benjamin Huard at ENS Lyon, France, (quantum error correction)
- Ioan Pop at KIT, Germany, (high kinetic inductance materials)
- Gerhard Kirchmair at University of Innsbruck, Austria, (quantum error correction)

Peer review

- Journal articles: PRL, PRX, Nature Physics.
- Grants: ERC starting grants.

Publications and scientific communications

- 41 published articles, including 4 Nature, 2 Science, 1 Nature Physics, 5 Phys Rev X, 5 Phys Rev Lett and 4 Nature Comm.
- $h=21$ with 3006 citations (Scopus, 11/08/2022)

Intellectual property

- Patent on a Josephson dipole element that mediates two-to-one photon exchange. With Raphaël Lescanne. (US11302856B2)

- Patent on a microwave photon detector. With Raphaël Lescanne, Samuel Deléglise and Emmanuel Flurin. (*US20220057261A1*)