



# Atomic tunneling Systems and fluctuating Spins interacting with superconducting Qubits

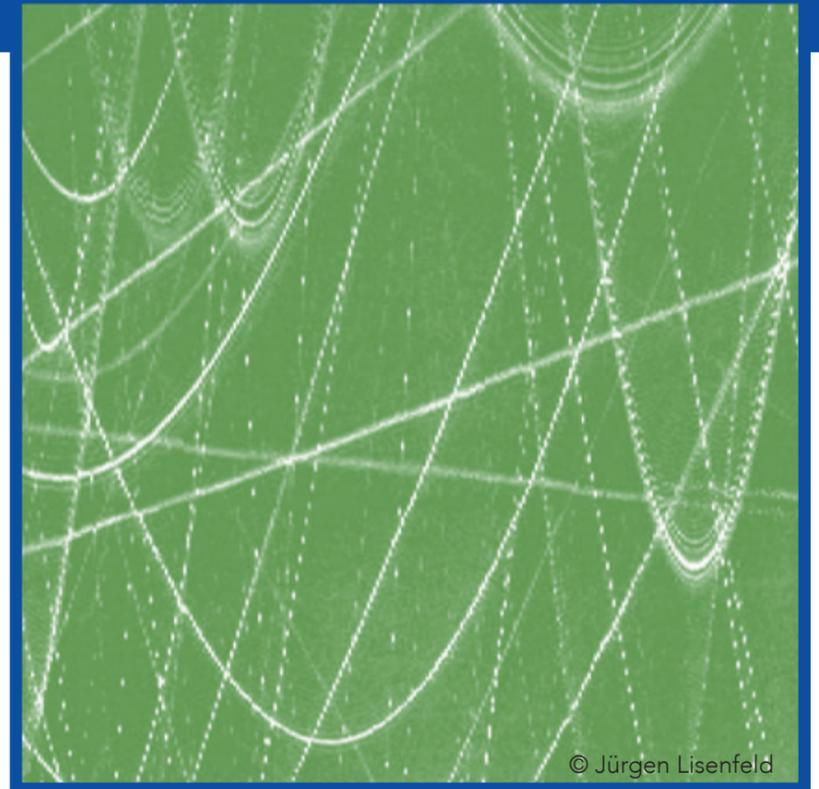
## International Workshop 25 February - 1 March 2019

Atomic tunneling systems and fluctuating spins constitute a serious nuisance for various Josephson junction-based devices, where they act as a source of noise and decoherence.

The workshop aims to advance the fundamental understanding of tunneling systems, spins and superconducting qubits and their interaction, and to promote progress towards future applications like quantum computing.

### Topics

- origin of noise in Josephson junctions
- relaxation processes and decoherence times in superconducting qubits
- physics and dynamics of tunneling systems
- microscopic nature of tunneling systems
- probing individual tunneling systems
- tunneling systems far from equilibrium
- the role of nuclear spins in tunneling systems and Josephson junctions
- fluctuating electric dipoles and magnetic moments in superconducting circuits
- spin-glass physics
- prospects of quantum computing
- origin of  $1/f$  noise in superconducting qubits
- production and morphology of thin oxide-barriers in Josephson junctions



© Jürgen Lisenfeld

### Invited speakers

Joakim Bergli (NO)  
Alexander Burin (US)  
Jared Cole (AU)  
Martin Cyster (AU)  
Mark Dykman (US)  
Lara Faoro (FR)  
Andrew Fefferman (FR)  
Yuri Galperin (NO)  
Sebastian de Graaf (UK)  
Pertti Hakonen (FI)  
Nadav Katz (IL)  
Sebastian Kempf (DE)  
Sergey Kubatkin (SE)  
Jürgen Lisenfeld (DE)  
John Martinis (US)  
Shlomi Matityahu (IL)  
Clemens Mueller (CH)  
Peter Nalbach (DE)  
Dmitry Parshin (RU)

Jukka Pekola (FI)  
Kevin Osborn (US)  
Yaniv Rosen (US)  
Angel Rubio (DE)  
Georg Weiss (DE)  
Clare C. Yu (US)

### Scientific coordinators

Christian Enss,  
Heidelberg, DE

Moshe Schechter,  
Beer-Sheva, IL

Alexander Shnirman,  
Karlsruhe, DE

### Organisation

Maria Voigt  
MPIPKS Dresden, DE

Applications received before 31 October 2018 are considered preferentially.

Applications are welcome and should be made by using the application form on the event's web page. The number of attendees is limited. The registration fee for the international workshop is 140 Euro and should be paid by all participants. Costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses.

### For further information please contact:

Visitors Program – Maria Voigt  
MPI for the Physics of Complex Systems  
Nöthnitzer Str. 38, D-01187 Dresden  
Tel: +49-351-871-1932  
Fax: +49-351-871-2199  
tlsqu19@pks.mpg.de  
www.pks.mpg.de/tlsqu19

*Do you want to receive pdf announcements via email?*

If yes, send an email to

[visitors@pks.mpg.de](mailto:visitors@pks.mpg.de) with

subject: pdf announcements

body: empty!



The Visitors Program

Max Planck Institute for the Physics of Complex Systems

[www.pks.mpg.de](http://www.pks.mpg.de)

*Do you want to receive pdf announcements via email?*

If yes, send an email to

[visitors@pks.mpg.de](mailto:visitors@pks.mpg.de) with

subject: pdf announcements

body: empty!



The Visitors Program

Max Planck Institute for the Physics of Complex Systems

[www.pks.mpg.de](http://www.pks.mpg.de)