



Recent Theoretical Advances Quantum Spins at the Nanoscale

The workshop **Quantum Spins at the Nanoscale: Recent Theoretical Advances** will bring together international experts in the field of Quantum Nanoscience in Ewha Womans University (Korea) between May 27th and 30th 2019 to stimulate discussion and foster collaborations about emerging physics of Quantum Systems from a theoretical perspective.

People

Invited Speakers

Europe

Daniel Loss (University of Basel)
Jelena Klinovaja (University of Basel)
Nicolas Lorente (CFM/DIPC)
Guido Burkard (Universität Konstanz)
Hugo Ribeiro (Max Planck Institute)
Samir Lounis (FZ Jülich)
Fernando Delgado (Univ. de La Laguna)
Joaquín Fernández Rossier (INL)

Japan

Takahiro Sagawa (University of Tokyo)
Peter Stano (RIKEN)

China

Mircea Trif (Tsinghua University)
Ying-Dan WANG (UCAS)
Fu Chun Zhang (UCAS)

Korea

Dong-Hee Kim (GIST)
Mahn Soo Choi (Korea University)
Gun Sang Jeon (EWAH)

Committee and Organizers

Andreas Heinrich (IBS QNS)
Pascal Simon (CNRS, Université Paris Sud)
Christoph Wolf (IBS QNS)

Description

The workshop **Quantum Spins at the Nanoscale: Recent Theoretical Advances** will focus on recent developments in the study of open quantum spin systems at the nanoscale where coherence, interactions and topology play an important role.

With the recent development of *quantum materials* and *spin control*, it becomes possible to emulate and reveal new complex and intriguing quantum phenomena both at equilibrium but also in the non-equilibrium by driving the systems. Quantum spin control also allows to address fundamental issues related to quantum information theory and spin-based quantum computing.

For more information

Email : conference@qns.science

Website : <https://qns.science/workshop/>



	Monday	Tuesday	Wednesday	Thursday
9:00-9:30	Welcome Address	Daniel Loss	Samir Lounis	J. Fernandez-Rossier
9:30-10:00	Peter Stano Theory and Experiments with gated quantum-dots in GaAs	Magnon Transport and Magnonic Topological Insulators	Spontaneous and externally-driven quantum spin fluctuations of adatoms	Emergent quantum matter in graphene nanoribbons
10:00-10:30				
13:30-11:00	Coffee Break			
11:00-11:30	Guido Burkard Cavity QED with Spin Qubits	Fu-Chun Zhang Exact solution for the interacting Kitaev chain at symmetric point	Nicolas Lorente Isospin-flip Spectroscopy	Pascal Simon Majorana zero modes around skyrmionic textures
11:30-12:00				
12:00-12:30				
12:30-14:00	Lunch Break			
14:00-14:30	Mahn-Soo Choi Superconducting Circuit QED System Interacting with Quantum Spins	Jelena Klinovaja Andreev Bound States and Majorana fermions in helical 1D systems	Fernando Delgado A tunneling mechanism for all-electrical Electron Spin Resonance	Farewell Address
14:30-15:00				
15:00-15:30	Takahiro Sagawa Second law and eigenstate thermalization in isolated quantum many-body systems	Mircea Trif Detecting Spin Current Noise in Quantum Magnets with Photons	Yingdan Wang Superradiant-like transport by electron shuttling on a nuclear spin island	
15:30-16:00				
16:00-16:30	Coffee Break			
16:30-17:00	Dong-Hee Kim Typical growth behavior of the out-of-time-ordered commutator in many-body localized systems	Hugo Ribeiro Accelerated Adiabatic Evolution and Applications to Quantum Information Processing	Gun Sang Jeon Frustration-induced Incommensurate Correlations in Quantum Spin-1 Chains	
17:00-17:30				
17:30-18:00	Break			
18:00-18:30		Social Dinner	Poster Session	
18:30-20:00				