

Intersectional Symposium Hybrid Quantum Systems - Interfacing Atoms, Solids and Light (SYHQ)

lead by the Low Temperature Physics Division (TT)

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Hybrid quantum systems combine in a well-controlled fashion quantum states from the fields of optics (photons), atomic physics (e.g. Bose-Einstein condensates, single atoms or ions), and condensed matter physics (e.g. charge and spin excitations, mesoscopic electronic and mechanical devices). As a long-term perspective, hybrid quantum systems might combine the individual advantages of the different quantum systems (such as coherence, addressability, scalability) to improve the performance of future quantum devices. In this colloquium, recent fundamental approaches for hybrid quantum systems will be presented.

Overview of Invited Talks and Sessions

(lecture room HSZ 01)

Invited Talks

SYHQ 1.1	Thu	10:30–11:00	HSZ 01	Circuit Quantum Electrodynamics with Electrons on Helium — •DAVID SCHUSTER
SYHQ 1.2	Thu	11:00–11:30	HSZ 01	Strong coupling of a spin ensemble to a superconducting resonator — •PATRICE BERTET, YUIMARU KUBO, FLORIAN ONG, DENIS VION, VINCENT JACQUES, DINGWEI ZHENG, ANAÏS DRÉAU, JEAN-FRANÇOIS ROCH, ALEXIA AUFFEVE, FEDOR JELEZKO, JÖRG WRACHTRUP, PHILIPPE BERGONZO, DANIEL ESTEVE
SYHQ 1.3	Thu	11:30–12:00	HSZ 01	Interfacing ultracold atoms and micromechanical oscillators — •PHILIPP TREUTLEIN, MARIA KORPPI, ANDREAS JÖCKEL, STEPHAN CAMERER, DAVID HUNGER, THEODOR W. HÄNSCH
SYHQ 1.4	Thu	12:00–12:30	HSZ 01	Interfacing Optomechanics and Atoms — •KLEMENS HAMMERER, MARKUS ASPELMEYER, JEFF KIMBLE, FLORIAN MARQUARDT, EUGENE POLZIK, PHILIPP TREUTLEIN, JUN YE, PETER ZOLLER
SYHQ 1.5	Thu	12:30–13:00	HSZ 01	Ultracold Atoms near Carbon Nanotubes — •ANDREAS GÜNTHER

Sessions

SYHQ 1.1–1.5	Thu	10:30–13:00	HSZ 01	Hybrid Quantum Systems – Interfacing Atoms, Solids and Light
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