Overview of Invited Talks and Sessions

(Lecture Rooms HSZ 03, HSZ 105, HSZ 201, HSZ 301, and HSZ 304; Poster Areas P1, P3, P4)

Invited Talks

TT 1.1 Mon 10:30–11:00 HSZ 03 Spin-orbit coupling in graphene: single layer, bilayer, trilayer, and graphite — Jaroslav Fabian

TT 26.1 Tue 14:00–14:30 HSZ 301 Quantum paradoxes in quantum transport — Wolfgang Belzig

TT 31.1 Wed 10:30–11:00 HSZ 301 New insights into the spin Hall effect — Peter Schwab

TT 34.7 Wed 15:45–16:15 HSZ 03 Coupled evolution and coherence of two-electron spin qubits — Hendrik Bluhm

TT 60.3 Fri 11:00–11:30 HSZ 301 Engineering Atomic-Scale Spin Systems — Sebastian Loth

Invited and Topical Talks of the Focused Session “Frontiers in Classical and Quantum Spin Liquids”

TT 6.1 Mon 14:00–14:45 HSZ 03 Magnetolyte Properties of Spin Ice — Steve Bramwell

TT 6.2 Mon 14:45–15:30 HSZ 03 Kitaev-Heisenberg Model on a Honeycomb Lattice: Possible Exotic Phases in Iridium Oxides \(A_2\text{IrO}_3\) — George Jackeli

TT 6.3 Mon 15:45–16:30 HSZ 03 Disorder in a quantum spin liquid: flux binding and local moment formation — John Chalker

TT 6.4 Mon 16:30–17:15 HSZ 03 Fractional spin textures in the frustrated magnet \(\text{SrCr}_9\text{Ga}_{12–9p}\text{O}_{19}\) — Kedar Damle

TT 6.5 Mon 17:15–18:00 HSZ 03 Quantum Criticality and E8 symmetry in an Ising Chain — Alan Tennant

Invited Talks of the Focused Session “50 Years of Flux Quantization”

TT 20.1 Tue 10:30–11:00 HSZ 03 The discovery of fluxoid quantization: 2e or not 2e — Dietrich Einzel

TT 20.2 Tue 11:00–11:30 HSZ 03 Fluxoid Quantization and the Superconducting Quantum Interference Device — John Clarke

TT 20.3 Tue 11:40–12:10 HSZ 03 Flux Quantization driving Fractional Flux Quantum Generation — Hans Hilgenkamp

TT 20.4 Tue 12:10–12:40 HSZ 03 Quantum information with quantized fluxoids: flux qubits — Johan E. Mooij

TT 20.5 Tue 12:40–13:10 HSZ 03 Flux quantization and the quantum Hall effect — Klaus von Klitzing

Invited and Topical Talks of the Focused Session “100 Years of Superconductivity”

TT 45.1 Thu 10:30–11:00 HSZ 03 Pairing fermions with population imbalance — Peter Fulde

TT 45.2 Thu 11:00–11:30 HSZ 03 Unconventional Superconductivity - Aspects of Symmetry and Topology — Manfred Sigrist
Low Temperature Physics Division (TT) Overview

TT 45.3 Thu 11:40–12:10 HSZ 03 Large Scale Applications of Superconductors and the Challenges that they have posed — •David Larbalestier

TT 45.4 Thu 12:10–12:40 HSZ 03 Weak Superconductivity and Superconductor Electronics — •Konstantin Likharev

Invited Talks of the SKM-Symposium “Spincaloric Transport” (SKM-SYST)

SKM-SYST 1.1 Mon 14:30–15:00 TRE Ma On the theory of the spin wave Seebeck effect — •Gerrit Bauer

SKM-SYST 1.2 Mon 15:00–15:30 TRE Ma Spin Seebeck effect in metals and insulators — •Ken-ichi Uchida

SKM-SYST 1.3 Mon 15:30–16:00 TRE Ma Spin-Seebeck effect: Local nature of thermally induced spin currents in GaMnAs — •Roberto Myers

SKM-SYST 1.4 Mon 16:00–16:30 TRE Ma Heat conduction of low-dimensional quantum magnets — •Christian Hess

SKM-SYST 1.5 Mon 16:30–17:00 TRE Ma Evidence of spin polarized heat current acting on magnetization — •Jean-Philippe Ansermet

Invited Talks of the SKM-Symposium “Topological Insulators” (SKM-SYTI)

SKM-SYTI 1.1 Wed 10:30–11:00 TRE Ma Topological insulators and topological superconductors — •Shoucheng Zhang

SKM-SYTI 1.2 Wed 11:00–11:30 TRE Ma Dirac Fermions in HgTe Quantum Wells — •Laurens Molenkamp

SKM-SYTI 1.3 Wed 11:30–12:00 TRE Ma Interaction, disorder, and quantum criticality in Z_2 topological insulators — •Alexander Mirlin

SKM-SYTI 1.4 Wed 12:00–12:30 TRE Ma Disorder and Interactions in Topological Insulators — •Allan H. MacDonald

SKM-SYTI 1.5 Wed 12:30–13:00 TRE Ma Tunable multifunctional topological insulators in ternary Heusler and related compounds — •Claudia Felser

Invited Talks of the Intersectional Symposium “Hybrid Quantum Systems – Interfacing Atoms, Solids and Light” (SYHQ)

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

SYHQ 1.3 Thu 11:30–12:00 HSZ 01 Interfacing ultracold atoms and micromechanical oscillators — •Philipp Treutlein

SYHQ 1.4 Thu 12:00–12:30 HSZ 01 Interfacing Optomechanics and Atoms — •Klemens Treutlein

SYHQ 1.5 Thu 12:30–13:00 HSZ 01 Ultracold Atoms near Carbon Nanotubes — •Andreas Günther

Invited Talks of the Intersectional Symposium “Cavity meets Circuit Quantum Electrodynamics” (SYQE)

SYQE 1.1 Fri 10:30–11:00 HSZ 01 The driven Jaynes-Cummings system: from atoms and cavities to circuits — •Howard Carmichael

SYQE 1.2 Fri 11:00–11:30 HSZ 01 Light shifts of ground-state quantum beats in Cavity QED, a consequence of quantum jumps. — •Luis Orozco

SYQE 1.3 Fri 11:30–12:00 HSZ 01 Tomography and Correlation Function Measurements of Propagating Microwave Photons — •Andreas Wallraff

SYQE 1.4 Fri 12:00–12:30 HSZ 01 Artificial atom in 1D open space — •Yasunobu Nakamura

SYQE 1.5 Fri 12:30–13:00 HSZ 01 Quantum dot based bright sources of quantum light. — •Pascale Senellart
Sessions

TT 1.1–1.8  Mon 10:30–13:00  HSZ 03  TR: Graphene 1 (jointly with MA, HL, and DY)
TT 2.1–2.9  Mon 10:30–13:00  HSZ 301  SC: Properties, Electronic Structure, Mechanisms 1
TT 3.1–3.10 Mon 10:30–13:15  HSZ 304  CE: Charge Density Wave & Peierls Instability
TT 4.1–4.9  Mon 10:30–13:00  HSZ 201  CE: Quantum-Critical Phenomena 1
TT 5.1–5.10 Mon 10:30–13:00  HSZ 02  Micro Mechanical Oscillator 1 (jointly with Q)
TT 6.1–6.5  Mon 14:00–18:00  HSZ 03  Focused Session: Frontiers in Classical and Quantum Spin Liquids
TT 7.1–7.9  Mon 14:00–16:15  HSZ 301  SC: Properties, Electronic Structure, Mechanisms 2
TT 8.1–8.16 Mon 14:00–18:30  HSZ 304  TR: Graphene 2 (jointly with MA, HL, and DY)
TT 9.1–9.15 Mon 14:00–18:15  HSZ 201  CE: (General) Theory 1
TT 10.1–10.57 Mon 14:00–18:00  P4  Poster Session: Superconductivity
TT 11.1–11.22 Mon 14:00–18:00  P4  Poster Session: Matter at Low Temperature
TT 12.1–12.3 Mon 14:30–15:15  HSZ 02  Micro Mechanical Oscillator 2 (jointly with Q)
TT 13.1–13.8 Mon 14:45–17:00  HSZ 04  Multiferroics I (jointly with DF, DS, KR, MA)
TT 14.1–14.7 Mon 17:00–18:45  HSZ 04  Multiferroics II (jointly with DF, DS, KR, MA)
TT 15.1–15.6 Mon 16:30–18:00  HSZ 301  SC: Fabrication and Characterization
TT 16.1–16.6 Mon 18:15–19:45  HSZ 03  TR: Nanoelectronics III - Molecular Electronics 1
TT 17.1–17.7 Mon 18:15–20:00  HSZ 301  SC: Fe-based Superconductors - 1111
TT 18.1–18.6 Mon 18:30–20:00  HSZ 201  CE: Low-dimensional Systems - Materials 1
TT 20.1–20.5 Tue 10:30–13:10  HSZ 03  Focused Session: 50 Years of Flux Quantization
TT 21.1–21.9 Tue 10:30–13:00  HSZ 301  TR: Nanoelectronics III - Molecular Electronics 2
TT 22.1–22.9 Tue 10:30–13:00  HSZ 304  CE: Low-dimensional Systems - Materials 2
TT 23.1–23.9 Tue 10:30–13:00  HSZ 105  CE: Quantum-Critical Phenomena 2
TT 24.1–24.21 Tue 10:15–10:45  HSZ 04  Multiferroics III (jointly with DF, DS, KR, MA)
TT 25.1–25.6 Tue 10:45–12:15  HSZ 04  Multiferroics IV (jointly with DF, DS, KR, MA)
TT 26.1–26.5 Tue 14:00–15:30  HSZ 301  TR: Fluctuations and Noise
TT 27.1–27.6 Tue 14:00–15:30  HSZ 304  SC: Fe-based Superconductors - LiFeAs
TT 28.1–28.6 Tue 14:00–15:30  HSZ 105  CE: (General) Theory 2
TT 29.1–29.11 Tue 18:00–21:00  P1  Poster Session: Quantum Information Systems, Quantum Coherence (jointly with SAMOP)
TT 30.1–30.9 Wed 10:30–13:00  HSZ 03  TR: Quantum Coherence and Quantum Information Systems 1 (jointly with MA and HL)
TT 31.1–31.8 Wed 10:30–13:00  HSZ 301  TR: Nanoelectronics II - Spintronics and Magnetotransport 1 (jointly with HL and MA)
TT 32.1–32.9 Wed 10:30–13:00  HSZ 304  SC: Fe-based Superconductors - Theory
TT 33.1–33.9 Wed 10:30–13:00  HSZ 105  CE: Metal-Insulator Transition 1
TT 34.1–34.16 Wed 14:00–18:45  HSZ 03  TR: Quantum Coherence and Quantum Information Systems 2 (jointly with MA and HL)
TT 35.1–35.20 Wed 14:00–19:45  HSZ 301  CE: Low-dimensional Systems - Materials 3
TT 36.1–36.16 Wed 14:00–18:30  HSZ 304  SC: Fe-based Superconductors - 122 - Properties, Electronic Structure, Mechanisms
TT 37.1–37.14 Wed 14:00–18:00  HSZ 105  MLT: Quantum Liquids, Bose-Einstein Condensates, Ultracold Atoms, ...
TT 38.1–38.41 Wed 14:00–18:00  P3  Poster Session Transport
TT 39.1–39.5 Wed 14:00–16:30  HSZ 04  Spin Structures/ Skyrmions (jointly with MA)
TT 40.1–40.10 Wed 16:45–19:15  HSZ 04  Topological Insulators (jointly with HL, MA)
TT 41.1–41.5 Wed 18:15–19:30  HSZ 105  CE: Spin Systems and Itinerant Magnets 1
TT 42.1–42.5 Wed 18:45–20:00  HSZ 304  SC: Fe-based Superconductors - Fe(Se,Te)
TT 43.1–43.5 Wed 19:00–20:15  HSZ 03  TR: Nanoelectronics II - Spintronics and Magnetotransport 2 (jointly with HL and MA)
TT 44.1–44.89 Thu 10:00–13:00  HSZ 105  TR: Quantum Coherence and Quantum Information Systems 2 (jointly with MA and HL)
TT 45.1–45.4 Thu 10:30–12:40  HSZ 03  Poster Session Correlated Electrons
TT 46.1–46.9 Thu 10:30–13:00  HSZ 301  SC: Tunneling, Josephson Junctions, SQUIDs 1
TT 47.1–47.9 Thu 10:30–13:00  HSZ 304  TR: Nanoelectronics I - Quantum Dots, Wires, Point Contacts 1
TT 48.1–48.9 Thu 10:30–13:00  HSZ 105  CE: Metal-Insulator Transition 2
TT 49.1–49.17 Thu 14:00–18:45  HSZ 03  CE: Spin Systems and Itinerant Magnets 2
TT 50.1–50.5 Thu 14:00–15:15  HSZ 301  SC: Tunneling, Josephson Junctions, SQUIDs 2
<table>
<thead>
<tr>
<th>Time</th>
<th>Day</th>
<th>Location</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT 51.1–51.6</td>
<td>Thu</td>
<td>HSZ 304</td>
<td>TR: Nanoelectronics I - Quantum Dots, Wires, Point Contacts 2</td>
</tr>
<tr>
<td>TT 52.1–52.8</td>
<td>Thu</td>
<td>HSZ 105</td>
<td>CE: Low-dimensional Systems - Models 1</td>
</tr>
<tr>
<td>TT 53.1–53.7</td>
<td>Thu</td>
<td>HSZ 401</td>
<td>SC: Heterostructures, Andreev Scattering, Proximity Effect</td>
</tr>
<tr>
<td>TT 54.1–54.7</td>
<td>Thu</td>
<td>HSZ 301</td>
<td>TR: Topological Insulators 1 (jointly with HL and MA)</td>
</tr>
<tr>
<td>TT 55.1–55.4</td>
<td>Thu</td>
<td>HSZ 304</td>
<td>SC: Heterostructures, Andreev Scattering, Proximity Effect</td>
</tr>
<tr>
<td>TT 56.1–56.9</td>
<td>Thu</td>
<td>HSZ 105</td>
<td>CE: Heavy Fermions</td>
</tr>
<tr>
<td>TT 57.1–57.6</td>
<td>Thu</td>
<td>HSZ 304</td>
<td>SC: Fe-based Superconductors - 122 - Thin Films</td>
</tr>
<tr>
<td>TT 58.1–58.6</td>
<td>Thu</td>
<td>HSZ 301</td>
<td>SC: Vortex Dynamics, Vortex Phases, Pinning</td>
</tr>
<tr>
<td>TT 59.1–59.9</td>
<td>Fri</td>
<td>HSZ 30</td>
<td>TR: Topological Insulators 2 (jointly with HL and MA)</td>
</tr>
<tr>
<td>TT 60.1–60.9</td>
<td>Fri</td>
<td>HSZ 301</td>
<td>SC &amp; MLT: Cryodetectors</td>
</tr>
<tr>
<td>TT 61.1–61.8</td>
<td>Fri</td>
<td>HSZ 304</td>
<td>TR: Nanoelectronics I - Quantum Dots, Wires, Point Contacts 3</td>
</tr>
<tr>
<td>TT 62.1–62.10</td>
<td>Fri</td>
<td>HSZ 105</td>
<td>CE: Low-dimensional Systems - Models 2</td>
</tr>
</tbody>
</table>

**Annual General Meeting Low Temperature Physics Division**

Thursday  19:00–20:30   HSZ 304