

Section Low Temperature Physics Fachverband Tiefe Temperaturen (TT)

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Overview of Invited Talks and Sessions

(Lecture rooms H18, H19, and H20; Poster A)

Internal Symposia within TT

TT12 Symposium: “Coated HTS Conductors”

Organization: W. Goldacker (Forschungszentrum Karlsruhe)

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|----------|-----|-------------|-----|---|
| TT 12.1 | Tue | 9:30–10:00 | H20 | Improvement of the Critical Current Density in YBCO Coated Conductors — ●BERNHARD HOLZAPFEL |
| TT 12.2 | Tue | 10:00–10:15 | H20 | A Reel to Reel MOCVD process for Coated Conductors — ●OLIVER STADEL |
| TT 12.3 | Tue | 10:15–10:30 | H20 | The potential of Roebel assembled coated conductor cables — ●CURT SCHMIDT |
| TT 12.4 | Tue | 10:45–11:00 | H20 | Limitation of fault current in power grids using YBCO coated conductors — ●WOLFGANG SCHMIDT |
| TT 12.5 | Tue | 11:00–11:15 | H20 | Switching and Quench Propagation in Coated Conductors for Fault Current Limiters — ●HELMUT KINDER |
| TT 12.6 | Tue | 11:15–11:30 | H20 | Nexans Advances in all CSD Route for REBCO Coated Conductors — ●MARK RIKEL |
| TT 12.7 | Tue | 11:30–11:45 | H20 | Temperature series to study the biaxial texturing of $La_2Zr_2O_7$ buffer layers on nickel-tungsten substrates — ●LEOPOLDO MOLINA |
| TT 12.8 | Tue | 12:00–12:15 | H20 | The pyrolysis of $YBa_2Cu_3O_{7-\delta}$ thin films produced by metal-organic deposition using trifluoroacetic acid-based precursors — ●THOMAS THER-SLEFF |
| TT 12.9 | Tue | 12:15–12:30 | H20 | Artificial pinning centers in $YBa_2Cu_3O_{7-x}$ thin films created by nanoparticles from the gas phase — ●MARIA SPARING |
| TT 12.10 | Tue | 12:30–12:45 | H20 | Development of conductive buffer architectures based on IBAD-TiN — ●RUBEN HÜHNE |
| TT 12.11 | Tue | 12:45–13:00 | H20 | Improved pinning in $YBa_2Cu_3O_{7-x}$ based quasi-multilayers prepared by off-axis pulsed laser deposition — ●ELKE BACKEN |

TT13 Symposium: “Superconductivity and Magnetism in Lamellar Cobaltates”

Organization: I. Eremin (MPI for Physics of Complex Systems (Dresden) & TU Braunschweig), P. Lemmens (TU Braunschweig), C. T. Lin (MPI for Solid State Research (Stuttgart))

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|---------|-----|-------------|-----|---|
| TT 13.1 | Tue | 14:00–14:30 | H18 | Angle-resolved photoemission studies on Na_xCoO_2 — ●HONG DING |
| TT 13.2 | Tue | 14:30–15:00 | H18 | Phase diagram and in-plane spin fluctuation in the novel superconducting system $Na_xCoO_2 \cdot y H_2O$ — ●KAZUYOSHI YOSHIMURA |
| TT 13.3 | Tue | 15:00–15:25 | H18 | Cooper-pair symmetry and spin correlations in the cobaltate superconductors $Na_xCoO_2 \cdot 1.3 H_2O$ — ●GUO-QING ZHENG |

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|---------|-----|-------------|-----|---|
| TT 13.4 | Tue | 15:40–16:05 | H18 | Magnetic phase separation in highly Na doped Na_xCoO_2 with $x > 0.75$. — •CHRISTIAN BERNHARD |
| TT 13.5 | Tue | 16:05–16:30 | H18 | Magnetic properties of spin-orbital polarons in lightly doped cobaltates — •MARIA DAGHOFER |
| TT 13.6 | Tue | 16:30–16:55 | H18 | Magnetic ordering and excitations in Na_xCoO_2 — •SIBEL BAYRAKCI |
| TT 13.7 | Tue | 17:10–17:35 | H18 | Superconducting epitaxial thin films of $\text{Na}_x\text{CoO}_2 \cdot y\text{D}_2\text{O}$: A route to new experiments — •LAMBERT ALFF |
| TT 13.8 | Tue | 17:35–17:50 | H18 | Electronic theory for itinerant in-plane magnetic fluctuations and many-body correlations in Na_xCoO_2 — •MAXIM KORSHUNOV |

TT16 Symposium: “50 Years BCS Theory”

Organization: P. Wölfle & M. Siegel (Universität Karlsruhe)

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|---------|-----|-------------|-----|---|
| TT 16.1 | Tue | 18:00–18:30 | H20 | BCS theory of a neutral Fermi liquid: the superfluid phases of Helium 3 — •PETER WOELFLE |
| TT 16.2 | Tue | 18:30–19:00 | H20 | Unconventional BCS States in Heavy-Fermion Superconductors — •FRANK STEGLICH |
| TT 16.3 | Tue | 19:00–19:30 | H20 | Hochtemperatur-Supraleitung: Ein Beispiel für die BCS-Idee? — •WERNER HANKE |
| TT 16.4 | Tue | 19:30–20:00 | H20 | Strolling through and beyond the Fields of BCS — •JOCHEN MANNHART |

TT19 Symposium: “Terahertz Detectors”

Organization: H.-G. Meyer (IPHT Jena), H.-W. Hübers (DLR Berlin)

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|---------|-----|-------------|-----|---|
| TT 19.1 | Wed | 14:00–14:40 | H20 | Superconducting detectors and mixers for submillimeter astrophysics — •JONAS ZMUIDZINAS |
| TT 19.2 | Wed | 14:40–15:20 | H20 | Superconducting detectors for low-background far infrared space astronomy — •PHILIP MAUSKOPF |
| TT 19.3 | Wed | 15:20–15:50 | H20 | Terahertz detectors using hot-electrons in superconducting films — •ALEXEI SEMENOV |
| TT 19.4 | Wed | 15:50–16:20 | H20 | SIS and HEB Devices for THz Frequency Mixer Applications — •KARL-FRIEDRICH SCHUSTER |
| TT 19.5 | Wed | 16:30–17:00 | H20 | Terahertz Bolometer Arrays for APEX — •ERNST KREYSA |
| TT 19.6 | Wed | 17:00–17:30 | H20 | FIR Detectors for Herschel and SOFIA — •ALBRECHT POGGLITSCH |
| TT 19.7 | Wed | 17:30–18:00 | H20 | A superconducting Terahertz imager — •TORSTEN MAY |

TT24 Symposium: “Condensed Matter Phases in Ultracold Atoms”

Organization: W. Hofstetter (Universität Frankfurt)

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|---------|-----|-------------|-----|--|
| TT 24.1 | Thu | 9:30–10:00 | H20 | Probing interacting systems of cold atoms using interference experiments — •EUGENE DEMLER |
| TT 24.2 | Thu | 10:00–10:30 | H20 | Criticality and correlations in cold atomic gases — •MICHAEL KÖHL |
| TT 24.3 | Thu | 10:30–10:45 | H20 | Bose gas in Flatland — •ZORAN HADZIBABIC |
| TT 24.4 | Thu | 11:10–11:35 | H20 | Simulations of ultra-cold atom gases on frustrated optical lattices — •STEFAN WESSEL |
| TT 24.5 | Thu | 11:35–12:00 | H20 | Multicolor Hubbard models with ultracold atoms — •CARSTEN HONERKAMP |
| TT 24.6 | Thu | 12:00–12:25 | H20 | Fermionic Superfluidity with Imbalanced Spin Populations — •MARTIN ZWIERLEIN |
| TT 24.7 | Thu | 12:25–12:50 | H20 | Vortex Matter in Optical Lattices — •MICHIEL SNOEK |

TT27 Symposium: “Graphene” in Continuation of the HL Symposium HL35 (Thu 10:00-12:30 H1)

Organization: G. Cuniberti (Universität Regensburg)

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| TT 27.1 | Thu | 14:00–14:30 | H20 | Graphene: New bridge between condensed matter physics and QED — •MIKHAIL KATSNELSON |
| TT 27.2 | Thu | 14:30–14:55 | H20 | Magnetic confinement of massless Dirac fermions in graphene — •W. HÄUSLER |
| TT 27.4 | Thu | 15:20–15:50 | H20 | Transport properties of mesoscopic graphene — •BJÖRN TRAUZETTEL |
| TT 27.5 | Thu | 15:50–16:15 | H20 | Scattering approach to disordered graphene — •MIKHAIL TITOV |

Further Invited Talks

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|---------|-----|-------------|-----|---|
| TT 3.1 | Mon | 9:30–10:00 | H20 | Experimental investigation of superconducting flux qubits — •EVGENI ILICHEV |
| TT 5.1 | Mon | 14:00–14:30 | H18 | Time-dependent density-functional theory: the framework, applications and recent developments — •LUCIA REINING |
| TT 5.7 | Mon | 16:00–16:30 | H18 | Electronic Correlations in Electron-Transfer Systems — •RALF BULLA |
| TT 9.4 | Mon | 17:00–17:30 | H20 | Crossed Andreev Reflection in Superconductor-Ferromagnet Hybrid Structures — •DETLEF BECKMANN |
| TT 14.5 | Tue | 15:00–15:30 | H19 | Topological phases in condensed matter — •RODERICH MOESSNER |
| TT 15.6 | Tue | 15:30–16:00 | H20 | Fractional flux quanta in Josephson junctions — •EDWARD GOLDOBIN |
| TT 15.7 | Tue | 16:00–16:30 | H20 | SQUID Technology for Geophysical Exploration — •HANS-GEORG MEYER |

Joint Symposia With Other Sections

SYSS Symposium: “Spins in Semiconductors”

(arranged by the divisions HL, MA, O, TT)

Organization: G. Bayreuther & J. Fabian (Universität Regensburg)

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| SYSS 1.1 | Mon | 9:30–10:00 | H1 | Generating and manipulating spins in semiconductors — •DAVID AWSCHALOM |
| SYSS 1.2 | Mon | 10:00–10:20 | H1 | Spin noise spectroscopy and spin dynamics in semiconductors — •MICHAEL OESTREICH |
| SYSS 1.3 | Mon | 10:20–10:40 | H1 | Spin-orbit interaction in Si quantum wells — •WOLFGANG JANTSCH |
| SYSS 1.4 | Mon | 10:40–11:00 | H1 | Driven coherent oscillations of a single electron spin in a quantum dot — •FRANK KOPPENS |
| SYSS 1.5 | Mon | 11:00–11:20 | H1 | Electrical spin injection and detection in semiconductors — •PAUL CROWELL |
| SYSS 1.6 | Mon | 11:20–11:40 | H1 | A microscopic view of the magnetism in magnetic semiconductors (<i>re- places the contribution by N. Samarth</i>) — •MICHAEL FLATTÉ |
| SYSS 1.7 | Mon | 11:40–12:00 | H1 | Tailoring ferromagnetism in bulk semiconductors and quantum dots — •IGOR ZUTIC |
| SYSS 1.8 | Mon | 12:00–12:20 | H1 | Tunnel Anisotropic Magneto Resistance - TAMR — •LAURENS MOLENKAMP |
| SYSS 1.9 | Mon | 12:20–12:40 | H1 | Electric field controlled spintronic effects based on spin-orbit coupling — •TOMAS JUNGWIRTH |
| SYSS 1.10 | Mon | 12:40–13:00 | H1 | Zero-bias spin separation in semiconductor heterostructures — •SERGEY GANICHEV |

SYEN Symposium: “Entanglement”

(arranged by the divisions DY, HL, TT)

Organization: J. Siewert (Universität Catania(Italien))

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| SYEN 1.1 | Thu | 14:00–14:30 | H1 | Probabilities (and more) from entanglement — •WOJCIECH ZUREK |
| SYEN 1.2 | Thu | 14:30–15:00 | H1 | Entanglement and the Foundations of Statistical Mechanics — •SANDU POPESCU |
| SYEN 1.3 | Thu | 15:00–15:30 | H1 | Universality and classical simulation of quantum computation — •HANS BRIEGEL |

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| SYEN 1.4 | Thu | 15:30–16:00 | H1 | Towards the convex roof of multipartite entanglement measures — •ANDREAS OSTERLOH |
| SYEN 1.5 | Thu | 16:00–16:30 | H1 | Decoherence induced by interacting quantum spin baths — •ROSARIO FAZIO |
| SYEN 1.6 | Thu | 16:30–17:00 | H1 | Sweep a qubit to learn about its environment — •PETER HÄNGGI |

Sessions

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|---------------|-----|-------------|----------|--|
| TT 1.1–1.7 | Mon | 9:30–11:15 | H18 | Superconductivity - Fabrication and Characterization |
| TT 2.1–2.12 | Mon | 9:30–12:45 | H19 | Quantum-Critical Phenomena |
| TT 3.1–3.12 | Mon | 9:30–13:00 | H20 | Quantum Coherence and Quantum Information Systems I |
| TT 4.1–4.5 | Mon | 11:30–12:45 | H18 | Solids at Low Temperature - Materials |
| TT 5.1–5.13 | Mon | 14:00–18:00 | H18 | Correlated Electrons - (General) Theory |
| TT 6.1–6.11 | Mon | 14:00–17:00 | H19 | Nanoelectronics III - Molecular Electronics |
| TT 7.1–7.8 | Mon | 14:00–16:00 | H20 | Quantum Coherence and Quantum Information Systems II |
| TT 8.1–8.48 | Mon | 14:00–17:45 | Poster A | Superconductivity - Poster Session |
| TT 9.1–9.6 | Mon | 16:15–18:00 | H20 | Superconductivity - Heterostructures, Andreev Scattering, Proximity Effect, Coexistence |
| TT 10.1–10.13 | Tue | 9:30–13:00 | H18 | Superconductivity - Properties, Electronic Structure, Order Parameter |
| TT 11.1–11.10 | Tue | 9:30–12:15 | H19 | Quantum Impurities, Kondo Physics |
| TT 12.1–12.11 | Tue | 9:30–13:00 | H20 | Symposium “Coated HTS Conductors” |
| TT 13.1–13.8 | Tue | 14:00–17:50 | H18 | Symposium “Superconductivity and Magnetism in Lamellar Cobaltates” |
| TT 14.1–14.18 | Tue | 14:00–19:15 | H19 | Spin Systems and Itinerant Magnets |
| TT 15.1–15.10 | Tue | 14:00–17:15 | H20 | Superconductivity - Tunneling, Josephson Junctions, SQUIDS |
| TT 16.1–16.4 | Tue | 18:00–20:00 | H20 | Symposium “50 Years BCS Theory” |
| TT 17.1–17.15 | Wed | 14:00–18:00 | H18 | Heavy Fermions |
| TT 18.1–18.12 | Wed | 14:00–17:15 | H19 | Nanoelectronics I - Quantum Dots, Wires, Point Contacts |
| TT 19.1–19.7 | Wed | 14:00–18:00 | H20 | Symposium “Terahertz Detectors” |
| TT 20.1–20.84 | Wed | 14:00–17:45 | Poster A | Correlated Electrons - Poster Session |
| TT 21.1–21.20 | Wed | 14:00–17:45 | Poster A | Solids at Low Temperature - Poster Session |
| TT 22.1–22.13 | Thu | 9:30–13:00 | H18 | Low-dimensional Systems - Materials |
| TT 23.1–23.11 | Thu | 9:30–12:30 | H19 | Nanoelectronics II - Spintronics and Magnetotransport |
| TT 24.1–24.7 | Thu | 9:30–12:50 | H20 | Symposium “Condensed Matter Phases in Ultracold Atoms” |
| TT 25.1–25.7 | Thu | 14:00–15:45 | H18 | Quantum Liquids, Bose-Einstein Condensates, Ultracold Atoms, ... |
| TT 26.1–26.13 | Thu | 14:00–17:30 | H19 | Metal-Insulator Transition |
| TT 27.1–27.6 | Thu | 14:00–16:40 | H20 | Symposium “Graphene” |
| TT 28.1–28.55 | Thu | 14:00–17:45 | Poster A | Transport - Poster Session |
| TT 29.1–29.7 | Thu | 16:00–17:45 | H18 | Superconductivity - Mechanisms, Phase Diagram, Competing Order |
| TT 30.1–30.8 | Thu | 17:00–19:00 | H20 | Superconductivity - Cryodetectors |
| TT 31.1–31.6 | Thu | 17:45–19:15 | H19 | Low-dimensional Systems - Models I |
| TT 32.1–32.5 | Thu | 18:00–19:15 | H18 | Fluctuations and Noise |
| TT 33.1–33.10 | Fri | 10:15–13:00 | H18 | Low-dimensional Systems - Models II |
| TT 34.1–34.10 | Fri | 10:15–13:00 | H19 | Superconductivity - Vortex Dynamics, Vortex Phases, Pinning |

Annual General Meeting of the Section Low Temperature Physics

Donnerstag 19:30–20:00 H19

- Frühjahrstagung 2007, Statistics
- Themenkreise, Symposien
- Bericht: DPG und AKF Sitzungen
- Frühjahrstagung 2008

- Verschiedenes

TT Time Table

PV: Plenary Talk ; ÖAV: Public Talk; HV: Invited Talk ; SY: Symposium

SC: Superconductivity ; CE: Correlated Electrons ; TR: Transport ; SLT: Solids at Low Temperature

Monday 26/03/07

8:30 *PV Louie* H1

9:30-11:15 **TT1** H18
SC - Fabrication and
Characterization

11:30-12:45 **TT4** H18
SLT - Materials

9:30-12:45 **TT2** H19
CE - Quantum-Critical
Phenomena

9:30-13:00 **TT3** H20
TR - Quantum Coherence
and Quantum Information
Systems I

9:30 *HV Ilichev*

9:30-13:20 **SYSS** H1
SY Spins in
Semiconductors

13:00 *Talks and Discussion "Hirschindex"* H1

14:00-18:00 **TT5** H18
CE - (General) Theory

14:00 *HV Reining*

16:00 *HV Bulla*

14:00-17:00 **TT6** H19
TR - Nanoelectronics III
Molecular Electronics

14:00-16:00 **TT7** H20
TR - Quantum Coherence
and Quantum Information
Systems II

16:15-18:00 **TT9** H20
SC - Heterostructures,
Andreev Scattering,
Proximity Effect,
Coexistence

17:00 *HV Beckmann*

14:00-17:45 **TT8** Poster A
SC - Poster Session

14:45-17:30 **HL11** H15
Quantum Dots & Wires:
TR Properties I

16:15-17:45 **DY17**
Quantum Decoherence

18:00 *PVs Paetzold / Bessenroth-Weberpals* H1

Tuesday 27/03/07

8:30 *PV Lemke* H1

9:30-13:00 **TT10** H18
SC - Properties,
Electronic Structure,
Order Parameter

9:30-12:15 **TT11** H19
CE - Quantum Impurities,
Kondo Physics

9:30-13:00 **TT12** H20
SC - SY Coated
HTS Conductors

9:30 *HV Holzapfel*

10:45-13:00 **HL20** H14
Spin-controlled TR I

13:00 *Max-Planck-Preisträger-Vortrag Lebowitz* H1

14:00-17:50 **TT13** H18
SC - SY SC & Magnetism
in Lamellar Cobaltates

14:00 *HV Ding*

14:30 *HV Yoshimura*

14:00-19:15 **TT14** H19
CE - Spin Systems and
Itinerant Magnets

15:00 *HV Mössner*

14:00-17:15 **TT15** H20
SC - Tunneling, Josephson
Junctions, SQUIDS

15:30 *HV Goldobin*

16:00 *HV Meyer*

14:00-16:00 **HL24** H14
Spin-controlled TR II

14:00-17:00 **HL25** H15
Quantum Dots & Wires:
TR Properties II

15:00-17:00 **HL27** H1
SY BEC in Semiconductors

17:00 *PV Hoodbhoy "Islam and Science"* H1

18:00 *PV Krige* H1

18:00-20:00 **TT16** H20
SC - SY 50 Years BCS

18:00 *Wölffe*

18:30 *Steglich*

19:00 *Hanke*

19:30 *Mannhart*

Wednesday 28/03/07

8:30 PVs Zabel / Imamoglu H1

10:30 Festsitzung H1

14:15 Gaede-Preisträger-Vortrag H1

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| 14:00-18:00 TT17 H18 CE - Heavy Fermions | 14:00-17:15 TT18 H19 TR - Nanoelectronics I Quantum Dots, Wires, Point Contacts | 14:00-18:00 TT19 H20 SC - SY THz Detectors 14:00 HV Zmuidzinas 14:40 HV Mauskopf | 14:00-17:45 TT20 Poster A CE - Poster Session 14:00-17:45 TT21 Poster A SLT - Poster Session |
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18:00 Mitgliederversammlung der DPG H1

20:00 ÖAV Arzt H1

Thursday 29/03/07

8:30 PV Schottky-Preisträger-Vortrag Finley H1

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| 9:30-13:00 TT22 H18 CE - Low-dimensional Systems - Materials | 9:30-12:30 TT23 H19 TR - Nanoelectronics II Spintronics and Magnetotransport | 9:30-12:50 TT24 H20 SLT - SY Condensed Matter Phases in Ultracold Atoms 9:30 HV Demler 10:00 HV Köhl | 9:30-13:00 MA21 H10 9:30 HV Fisk 10:00-12:30 HL36 H1 HL - SY Graphene 12:30-12:45 HL42 H13 Metall-Isolator-Übergänge |
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13:00 Stern-Gerlach-Preisträger-Vortrag Grünberg H1

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| 14:00-15:45 TT25 H18 SLT - Quantum Liquids, Bose-Einstein Condensates, Ultracold Atoms, ... | 14:00-17:30 TT26 H19 CE - Metal-Insulator Transition | 14:00-16:40 TT27 H20 CE - SY Graphene 14:00 HV Katsnelson 15:20 HV Trauzettel | 14:00-17:45 TT28 Poster A TR - Poster Session 14:00-17:00 SYEN H1 SY Entanglement |
| 16:00-17:45 TT29 H18 SC - Mechanisms, Phase Diagram, Competing Order | | 17:00-19:00 TT30 H20 SC - Cryodetectors | |
| 18:00-19:15 TT32 H18 TR - Fluctuations & Noise | 17:45-19:15 TT31 H19 CE - Low-dimensional Systems - Models I | | |

19:30 Annual General Meeting of the Section Division Low Temperature Physics H19

Friday 30/03/07

8:30 PVs Norskov / Joanny H1

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| 10:15-13:00 TT33 H18 CE - Low-dimensional Systems - Models II | 10:15-13:00 TT34 H19 SC - Vortex Dynamics, Vortex Phases, Pinning | 11:00-13:30 HL52 H14 TR Properties |
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