

PHYSICAL PHENOMENA AT HIGH MAGNETIC FIELDS-V
Tallahassee, Florida
August 5-9, 2005

Venue for all days except Saturday, August 6

The Tom and Ginny Futch Ballroom
University Center B, Third Floor
Doak Campbell Stadium
Florida State University
Tallahassee, Florida

Venue for Saturday, August 6

First Floor Ballroom
The Tallahassee DoubleTree Hotel
101 South Adams Street
Tallahassee, Florida

PROGRAM

Thursday, August 4, 2005

1800 – 2030 Welcome Reception and Conference Registration – The DoubleTree Hotel
101 South Adams Street, Tallahassee, Florida

Friday, August 5, 2005

0730 - 0830	Continental Breakfast at the University Center
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(Transportation will be provided between the hotel and the University Center
- Bus schedules will be posted in the Hotel Lobby during the Conference)

On-Site registration at the University Center

0830 – 0845 **T. K. Wetherell**, President of Florida State University
Opening Remarks

J. BROOKS CHAIR **Session MC-1** (MC-Molecular Conductors)

0845 – 0915 MC-1.1 **J. Kono**, Rice University
Spectroscopy of carbon nanotubes in ultrahigh magnetic fields

0915 – 0945 MC-1.2 **R. D. McDonald**, NHMFL, Los Alamos National Laboratory
*High magnetic field studies of the fully gapped charge-density wave system
(Per)₂M(mnt)₂ (where M = Au and Pt)*

0945 – 1000 MC/C-1.3 **D. Graf**, NHMFL, Florida State University
Quantum limit in a Q1D system under pressure

1000 – 1015 MC/C-1.4 **W. Kang**, Ewha Womans University, Korea
Rotation experiments under pressure using a standard superconductor solenoid magnet

1015 - 1035	Coffee Break
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S. HANNAHS CHAIR **Session MC-2**

1035 – 1105 MC-2.1 **E. Demler**, Harvard University
Triplet superconductivity and antiferromagnetism in Bechgaard salts

1105 – 1135 MC-2.2 **S. Uji**, National Institute for Materials Science, Japan
Hall resistance oscillation in the extreme quantum limit of an organic conductor (TMTSF)₂ClO₄

1135 – 1150 MC/C-2.3 **A. G. Lebed**, University of Arizona
Can superconductivity be more exotic than unconventional?

1150 – 1205 MC/C-2.4 **A. M. Bangura**, University of Oxford, United Kingdom
Yamaji oscillations due to magnetic breakdown in the organic superconductor κ -(BEDT-TTF)₂Cu(NCS)₂ submitted to large hydrostatic pressures and high fields

1205 - 1335	Lunch at the University Center
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D. SMIRNOV CHAIR **Session OT-1 (OT-Other Topics)**

1335 – 1405 OT-1.1 **A. P. Ramirez**, Lucent Technologies
Physics of organic semiconductors

1405 – 1435 OT-1.2 **A. Gurevich**, University of Wisconsin
High-field superconductivity in the two-gap MgB₂ near the paramagnetic limit

1435 – 1505 OT-1.3 **P. Christianen**, High Field Magnet Laboratory, Nijmegen, The Netherlands
Magnetic manipulation of pi-conjugated supramolecular architectures

1505 – 1525	Coffee Break
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H. SCHNEIDER-MUNTAU CHAIR
Facilities Presentations

1525 – 1655 FAC-1.1 **P. Smeibidl**, Hahn-Meitner-Institute Berlin, Germany
Structural research with neutrons in high magnetic fields

- FAC-1.2 **N. Kobayashi**, Institute for Materials Research, Tohoku University, Japan
Magnet technology and high field research at the HFLSM
- FAC-1.3 **J. Wosnitza**, Hochfeld-Magnetlabor Dresden, Germany
Recent developments at the Dresden High Magnetic Field Laboratory
- FAC-1.4 **M. von Ortenberg**, Humboldt University at Berlin, Germany
The HUMBOLDT High Magnetic Field Center at Berlin
- FAC-1.5 **O. Portugall**, LNCMP, Toulouse, France
The Toulouse Pulsed-Magnet Facility: state of the art and future activities
- FAC-1.6 **E. Ohmichi**, ISSP, University of Tokyo, Japan
Current news from the Megagauss Laboratories at ISSP, University of Tokyo
- FAC-1.7 **G. Srajer**, Advanced Photon Source, Argonne National Laboratory
Magnetism Studies at the Advanced Photon Source
- FAC-1.8 **P. Christianen**, High Field Magnet Laboratory, Nijmegen, The Netherlands
The Nijmegen High Field Magnet Laboratory HFML.
- FAC-1.9 **W. Joss**, Grenoble High Magnetic Field Laboratory, France
The Grenoble High Magnetic Field Laboratory: A User Facility

1655 – 1800

Facilities Poster Session

Saturday, August 6, 2005

(Note: On Saturday, the conference will be held in the Ballroom of the DoubleTree hotel)

0730 - 0830	Continental Breakfast at the DoubleTree Hotel	
<i>N. BONESTEEL CHAIR</i>	Session SQHE-1 (SQHE - Semiconductors and Quantum Hall Effect)	
0830 – 0900	SQHE-1.1	W. Pan , Sandia National Laboratory <i>Quantization of the diagonal resistance, empirical resistance rule, and linear magnetoresistance</i>
0900 – 0930	SQHE-1.2	L. W. Engel , NHMFL, Florida State University <i>Recent results in microwave and RF spectroscopy of two-dimensional electron solids</i>
0930 – 1000	SQHE-1.3	H. A. Fertig , Indiana University <i>Coherence, disorder, and superfluidity in the quantum Hall bilayer</i>
1000 – 1015	SQHE/C-1.4	A. de Visser , University of Amsterdam, The Netherlands <i>Quantum Hall effect and critical behavior of the 2DEG in an InGaAs/InP heterostructure</i>

1015 - 1035	Coffee Break
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S. VON MOLNAR CHAIR **Session SQHE-2**

1035 – 1105	SQHE-2.1	X. P. A. Gao , NHMFL, Los Alamos National Laboratory <i>Strongly enhanced hole-phonon coupling and non-monotonic effective mass in a low density 2D hole system</i>
1105 – 1135	SQHE-2.2	O. M. Auslaender , Stanford University <i>Observation of spin-charge separation and localization in a one-dimensional quantum wire</i>
1135 – 1205	SQHE-2.3	A. Finkel'stein , Weizmann Institute of Science, Israel <i>Chiral spin resonance and spin-Hall conductivity in the presence of the electron-electron interactions</i>
1205 – 1220	SQHE/C-2.4	M. Furis , NHMFL, Los Alamos National Laboratory <i>Photoluminescence studies of CdSe nanocrystals in high magnetic fields</i>
1220 – 1700		Box Lunch & Excursion to Wakulla Springs
1700 – 1830		Tour of NHMFL
1830 – 2030		Barbecue at NHMFL

Sunday, August 7, 2005

0730 - 0830	Continental Breakfast at the University Center
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N. HARRISON CHAIR **Session HFQC-1** (HFQC - Heavy Fermions and Quantum Criticality)

0830 – 0900	HFQC-1.1	E. D. Bauer , Los Alamos National Laboratory <i>Tuning unconventional PuMGa₅ and CeMIn₅ superconductors</i>
0900 – 0930	HFQC-1.2	J. Flouquet , CEA-Grenoble, France <i>Magnetic field effect on heavy fermion matter</i>
0930 – 1000	HFQC-1.3	Q. Si , Rice University <i>Quantum phase transition and non-Fermi liquid behavior</i>
1000 – 1015	HFQC/C-1.4	M. T. Glossop , University of Florida <i>The Bose-Fermi Kondo model and heavy fermion quantum criticality</i>

1015 – 1035	Coffee Break
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N. SULLIVAN CHAIR **Session HFQC-2**

1035 – 1105	HFQC-2.1	T. Ebihara , Shizuoka University, Japan <i>Fluctuation hot spots on the Fermi surface of CeIn₃ in high magnetic field</i>
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- 1105 – 1135 HFQC-2.2 **D. F. Agterberg**, University of Wisconsin - Milwaukee
Magnetic fields and superconductivity without inversion symmetry in CePt₃Si
- 1135 – 1205 HFQC-2.3 **B. Andraka**, University of Florida
PrOs₄Sb₁₂ and related systems in strong magnetic fields

1205 - 1335	Lunch at the University Center
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J. FLOUQUET CHAIR **Session HFQC-3**

- 1335 – 1405 HFQC-3.1 **J. A. Mydosh**, Leiden University, The Netherlands
Why we need high magnetic fields in strongly correlated electron physics: The case of URu₂Si₂
- 1405 – 1435 HFQC-3.2 **V. P. Mineev**, CEA-Grenoble, France
Magnetic ordering in URu₂Si₂
- 1435 – 1450 HFQC/C-3.3 **A. Souslov**, NHMFL, Florida State University
Ultrasonic studies at high DC magnetic fields

1450 – 1510	Coffee Break
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P. SCHLOTTMANN CHAIR **Session HFQC-4**

- 1510 – 1540 HFQC-4.1 **E. Palm**, NHMFL, Florida State University
Experimental evidence for the existence of the FFLO state in CeCoIn₅
- 1540 – 1610 HFQC-4.2 **C. Capan**, Louisiana State University
Possible FFLO inhomogeneous superconducting state in CeCoIn₅
- 1610 – 1640 HFQC-4.3 **J. Y. T. Wei**, University of Toronto, Canada
Andreev spectroscopy study of unconventional pairing states in CeCoIn₅

1640 – 1800 **POSTER SESSION I**

Monday, August 8, 2005

0730 – 0830	Continental Breakfast at the University Center
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P. LITTLEWOOD CHAIR **Session HT-1 (HT-High T_c)**

- 0830 – 0900 HT-1.1 **J. C. Séamus Davis**, Cornell University
Atomic-resolution 'Mottness Mapping' in the lightly hole-doped cuprate Mott Insulator: Ca_{2-x}Na_xCuO₂Cl₂
- 0900 – 0930 HT-1.2 **F. F. Balakirev**, NHMFL, Los Alamos National Laboratory
Abnormal normal state in high-T_c superconductors revealed in 60-tesla fields

0930 – 1000 HT-1.3 **Y. Ando**, Central Research Institute of Electric Power Industry, Japan
Giant magnetoresistance in a cuprate and a cobaltate

1000 – 1015 HT/C-1.4 **C. Sa de Melo**, Georgia Institute of Technology
High magnetic field reentrant superconductivity in CMR-ferromagnet / high-Tc-superconductor heterostructures

1015 – 1035 Coffee Break

A. REYES CHAIR **Session HT-2**

1035 – 1105 HT-2.1 **V. Mitrovic**, Brown University
High magnetic field NMR microscopy of vortices in high-Tc superconductors

1105 – 1135 HT-2.2 **K. Behnia**, ESPCI, France
Departure from the Wiedemann-Franz law in the vicinity of the metal-insulator transition in a high-Tc cuprate

1135 – 1205 HT-2.3 **M. Abdel-Jawad**, University of Bristol, United Kingdom
Doping dependence study of angular magnetoresistance oscillation in $Tl_2Ba_2CuO_{6+\delta}$

1205 – 1335 Lunch at the University Center

C. WIEBE CHAIR **Session HT-3**

1335 – 1405 HT-3.1 **M. Huecker**, Brookhaven National Laboratory
The spin stripe phase of $La_{1.875}Ba_{0.125}CuO_4$ in a magnetic field

1405 – 1435 HT-3.2 **B. Lake**, Ames Laboratory and Iowa State University
Three-dimensionality of field-induced magnetism in a high-temperature superconductor

1435 – 1450 HT/C-3.3 **J. Mesot**, ETH-Zurich and PSI, Switzerland
Elastic and inelastic neutron scattering studies of cuprate superconductors in magnetic fields up to 15 T

1450 – 1510 Coffee Break

I. CHIORESCU CHAIR **Session OT-2**

1510 – 1540 OT-2.1 **J. M. Valles**, Brown University
Cell biology in 20 Tesla

1540 – 1610 OT-2.2 **T. Kimura**, Los Alamos National Laboratory
Magnetic field effect on di- and ferro-electric properties in frustrated spin systems

1610 – 1625 OT/C-2.3 **J. Johansson**, NTT Basic Research Laboratories, Japan
Vacuum Rabi oscillations in a macroscopic flux qubit LC circuit system

1625 – 1640 OT/C-2.4 **G. W. Morley**, NHMFL, Florida State University
Complete scheme for two-qubit quantum computing using pulsed ESR of $^{15}\text{N}@C_{60}$

1640 – 1800 **POSTER SESSION II**

1900 – 2100	Conference Banquet at the University Center
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Tuesday, August 9, 2005

0730 - 0830	Continental Breakfast at the University Center
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S. HILL CHAIR **Session M-1** (M-Magnetism)

0830 – 0900 M-1.1 **H. Nojiri**, Tohoku University
High field ESR and spin reversal in zero and one-dimensional spin systems

0900 – 0930 M-1.2 **A. Cornia**, University of Modena and Reggio Emilia, Italy
High field investigation of molecular nanomagnets by torque magnetometry

0930 – 1000 M-1.3 **A. Zheludev**, Oak Ridge National Laboratory
Dynamics of magnetized bond-alternating $S=1$ chains

1000 – 1015 M/C-1.4 **J. Krzystek**, NHMFL, Florida State University
Solitary waves in $S=1/2$ quantum spin chains: ESR study in magnetic fields up to 25 T

1015 – 1035	Coffee Break
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S. TOZER CHAIR **Session M-2**

1035 – 1105 M-2.1 **M. Jaime**, NHMFL, Los Alamos National Laboratory
Critical exponents in magnetic-field-induced spin-BEC System $\text{BaCuSi}_2\text{O}_6$

1105 – 1135 M-2.2 **Ch. Rüegg**, University College London, United Kingdom
Condensate ground-states in dimer spin-liquids

1135 – 1150 M/C-2.3 **L. Balicas**, NHMFL, Florida State University
Coexistence of localized and itinerant electronic states in single layered ruthenates

1150 – 1205 M/C-2.4 **G. B. Teitelbaum**, Zavoiskii Institute, Russia
NMR studies of magnetic ordering in the quantum antiferromagnet LiCuVO_4

1205 – 1335	Lunch at the University Center
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