

Diego A. Zocco

I am an experimental condensed matter physicist with 20+ years of experience investigating quantum materials at low temperatures, high magnetic fields, and high-pressures. My current research explores the interplay between strong electronic correlations and topology, with a focus on uncovering novel quantum states of matter.

Nationality: Argentine, Polish (naturalized in 2011)

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Links: [Google Scholar](#), [Web of Science](#), ORCID: [0000-0002-6958-0416](#)



Education

2011	PhD Physics, University of California San Diego, USA Advisor: Prof. M. Brian Maple Title: <i>Interplay of Superconductivity, Magnetism, and Density Waves in Rare-Earth Tritellurides and Iron-Based Superconducting Materials</i>
2006	MS Physics, University of California San Diego, USA
2003	MS Physics, University of Buenos Aires, Argentina

Research activities

Current position and affiliation

Position	University and Project Assistant; Project Leader (since 01.2019)
Institution	Institute of Solid State Physics, Vienna University of Technology (TU Wien)
Address	Wiedner Hauptstr. 8-10/138, 1040 Vienna, Austria
Website	https://www.tuwien.at/phy/ifp

Previous research appointments

2011 – 2016	Postdoctoral Researcher, Karlsruhe Institute of Technology, Germany IQMT New Materials and Thermodynamics group, and Neutron Scattering group
2006 – 2011	Research Assistant, University of California San Diego, USA
2004 – 2005	Research Assistant, National High Magnetic Field Laboratory (MPA-NHMFL) Los Alamos National Laboratory, USA
2002 – 2004	Research Assistant, Physics Department, University of Buenos Aires, Argentina

Scientific output

- 40+ publications in peer-reviewed international scientific journals and conference proceedings
- h-index = 21 ([Google Scholar](#))
- 20+ invited talks at international conferences/workshops/seminars/colloquia

Research interests

- Correlation-driven topological insulators and Weyl semimetals.
- Strongly correlated electron systems, quantum phase transitions, heavy fermion compounds, Kondo phenomena, unconventional superconductivity, charge density waves.
- Low temperature physics, high pressures, high magnetic fields, stress/strain dependences, single crystals synthesis and characterization, elastic and inelastic x-ray and neutron scattering.

Funding

- Project title: *Driving spin-orbit coupling to the extreme*
Agency: Austrian Science Fund (FWF)
Role: Principal investigator
Duration: 01.2019 – 06.2023
Amount: €351,550.50
Website: www.ifp.tuwien.ac.at/forschung/projekte/fwf-exsoc

Participated in organizing and writing sections of the following grant proposals and reports:

- Proposals: U.S. DOE-NNSA/SSAA (2008), U.S. DOE (2009), U.S. CDAC Carnegie DOE Alliance Center (2010) (PI: M. B. Maple)
- Reports: U.S. DOE-NNSA/SSAA annual reports (2008, 2009), U.S. DOE final report (2008, 2010), U.S. NSF annual report (2009) (PI: M. B. Maple); Austrian FWF *TopQuantum* annual reports (2016, 2017, 2018) and final report (2019) (PI: S. Paschen)

Technical expertise

- **Low temperatures:** Extensive experience measuring electrical transport, magnetic, and thermodynamic properties in dilution refrigerators (DR) at various institutions (LANL, UCSD, KIT, TUW) with up to 20 T superconducting magnets, and with commercial ^3He PPMS and SQUID systems, and custom-built ^4He refrigerator systems
- **Materials characterization:** Electrical transport, Hall effect, magnetic susceptibility, torque magnetometry, Faraday magnetometry, heat capacity, thermal expansion, magnetostriction, powder and single crystal x-ray diffraction, Rietveld refinement
- **High pressures:** Extensive experience in the preparation of high pressure cells (hydrostatic clamps, Bridgman-anvil, diamond-anvil cells) for measurements of electrical resistivity, ac-magnetic susceptibility, ac-calorimetry (UCSD, TUW), and for elastic and inelastic x-ray scattering experiments at synchrotron user facilities (ESRF, Argonne)
- **High magnetic field laboratories/user facilities:**
 - 1 year full-time appointment at the National High Magnetic Field Lab, Los Alamos, USA
 - Expertise preparing proposals and performing experiments at various dc- and pulsed-field user facilities (Los Alamos, Tallahassee, Nijmegen) for torque magnetometry, magnetotransport, magnetization, dHvA and magnetostriction
- **X-ray & neutron scattering:** 3.5 years full-time appointment at the KIT-IQMT neutron scattering group
 - Expertise in x-ray and neutron scattering experiments at various user facilities: x-ray synchrotrons at ESRF-Grenoble (elastic and inelastic + high pressures) and APS-Argonne (inelastic + high pressures), neutron sources at LLB-Saclay, NCNR-NIST and SNS-Oak Ridge
 - Installation, optimization and use of a 4-circle x-ray diffractometer (Huber) equipped with Cu and Mo tube sources and graphite and germanium monochromators, for temperature-dependent measurements (5-800 K) with a closed-cycle cryostat (ARS)
- **Materials synthesis:** Single- and poly-crystalline bulk material synthesis: solid state reaction, molten-flux [filled skutterudites $(\text{Nd,Ce})_{1-x}\text{La}_x\text{Ru}_4\text{Sb}_{12}$, CuFeTe_2], Czochralski growth in multi-arc furnace [URu_2Si_2 , UCoGe]; experience with glass bench (quartz/pyrex)
- **Programming and computing experience:** LabView, Python (core, data acquisition); Origin-Pro, Excel, NumPy, SciPy, Matplotlib, COMSOL, FullProf, Mantis, PyCrystalField (data analysis); GitHub, LaTeX, HTML.

List of recent collaborators

S. Paschen, A. Prokofiev, E. Bauer (TU Vienna); M. B. Maple (UC San Diego); K. Grube, F. Weber, R. Heid, T. Wolf, H. v. Löhneysen (Karlsruhe Institute of Technology); M. Jaime, R. D. McDonald, F. Weickert, V. Zapf (LANL high-field facility); A. McCollam (Nijmegen high-field facility); I. R. Fisher (Stanford); G. Garbarino (ESRF, Grenoble); M. G. Vergniory (MPI CPfS/Donostia), C. Felser (MPI CPfS); J. Custers (Charles University, Prague); T. Shibauchi (U. Tokyo); Q. Si (Rice University).

Teaching and supervision activities

Teaching appointments

2017 – 2023	University Assistant, Vienna University of Technology, Austria
2014	Teaching Assistant, Karlsruhe Institute of Technology, Germany
2005 – 2007	Teaching Assistant, University of California San Diego, USA
2001 – 2004	Teaching Assistant/Lecturer, University of Buenos Aires, Argentina

Supervision of students

Co-supervised with Prof. Silke Paschen (Vienna): PhD (current), Master's (2021), and Bachelor's (2018) theses of Diana Kirschbaum, Project work of Mathias Pelz (2021), Master's thesis of Lukas Cvitkovich (2019); with Dr. Kai Grube (Karlsruhe): PhD thesis of Felix Eilers (2014); with Prof. M. Brian Maple (San Diego): students Noravee Kanchanavatee, Kevin Huang, Eileen Gonzalez, Nicole Crisosto, and Xiao Chen.

Other information

Scholarships and awards

2011	Karlsruhe Institute of Technology Postdoctoral Scholarship, Germany
2006	Teaching Assistant Excellence Award, UC San Diego, USA
2004	Graduate Scholarship, National Research Council (CONICET), Argentina
2003	Instituto Balseiro Scholarship, Centro Atómico Bariloche, Argentina
2002	MS Dissertation Scholarship, University of Buenos Aires, Argentina

Scientific service

- Regular reviewer for Nature Communications, Physical Review Letters, Physical Review X, Physical Review B, and Proceedings of the National Academy of Sciences
- Reviewer of funding proposals: Deutsche Forschungsgemeinschaft (German Research Foundation, Individual Grants)
- Outreach activities: San Diego Elementary School Science Day 2006, Young Physicists Program 2010 (San Diego, USA), Long Night of Research 2018 (*Lange Nacht der Forschung*, Vienna, Austria)

Languages

English, Spanish, German (advanced, B2 level)

Publications

Five selected publications marked with (***)

43. (***) *Emergent Topological Semimetal*
D. M. Kirschbaum, L. Chen, D. A. Zocco, H. Hu, F. Mazza, J. Larrea Jiménez, A. M. Strydom, D. Adroja, X. Yan, A. Prokofiev, Q. Si, and S. Paschen
Accepted in Nature Physics, arXiv:2404.15924 (2024), DOI: [10.48550/arXiv.2404.15924](https://doi.org/10.48550/arXiv.2404.15924)
42. (***) *The new heavy fermion compound $Ce_3Bi_4Ni_3$*
D. M. Kirschbaum, X. Yan, M. Waas, R. Svagera, A. Prokofiev, B. Stöger, P. Rogl, D.-G. Oprea, C. Felser, R. Valentí, G. Vergniory, J. Custers, S. Paschen, and D. A. Zocco
Phys. Rev. Research **6**, 023242 (2024), DOI: [10.1103/PhysRevResearch.6.023242](https://doi.org/10.1103/PhysRevResearch.6.023242)
41. (***) *Control of electronic topology in a strongly correlated electron system*
S. Dzsaber, D. A. Zocco, A. McCollam, F. Weickert, R. McDonald, M. Taupin, X. Yan, A. Prokofiev, L. M. K. Tang, B. Vlaar, L. E. Winter, M. Jaime, Q. Si, and S. Paschen
Nat. Commun. **13**, 5729 (2022), DOI: [10.1038/s41467-022-33369-8](https://doi.org/10.1038/s41467-022-33369-8)
40. *A Knudsen cell approach for the molecular beam epitaxy of the heavy fermion compound $YbRh_2Si_2$*
E. Bakali, W. Artner, M. Beiser, J. Bernardi, H. Detzce, G. Eguchi, A. Foelske, M. Giparakis, C. Herzig, A. Limbeck, H. Nguyen, L. Prochaska, A. Prokofiev, M. Sauer, S. Schwarz, W. Schrenk, G. Strasser, R. Svagera, M. Taupin, A. S. Thirsfeld, M. Waas, X. Yan, D. A. Zocco, A. M. Andrews, and S. Paschen
Journal of Crystal Growth **595**, 126804 (2022), DOI: [10.1016/j.jcrysgro.2022.126804](https://doi.org/10.1016/j.jcrysgro.2022.126804)
39. *Anisotropic physical properties of the Kondo semimetal $CeCu_{1.11}As_2$*
L. Cvitkovich, D. A. Zocco, G. Eguchi, M. Waas, R. Svagera, B. Stöger, R. Mondal, A. Thamizhavel, and S. Paschen
JPS Conf. Proc. **30**, 011020 (2020), DOI: [10.7566/JPSCP.30.011020](https://doi.org/10.7566/JPSCP.30.011020)
38. *Electron-phonon coupling and superconductivity-induced distortion of the phonon lineshape in V_3Si*
A. Sauer, D. A. Zocco, A. H. Said, R. Heid, A. Böhmer, and F. Weber
Phys. Rev. B **99**, 134511 (2019), DOI: [10.1103/PhysRevB.99.134511](https://doi.org/10.1103/PhysRevB.99.134511)
37. *Competing soft phonon modes at the charge-density-wave transitions in $DyTe_3$*
M. Maschek, D. A. Zocco, S. Rosenkranz, R. Heid, A. H. Said, A. Alatas, P. Walmsley, I. R. Fisher, and F. Weber
Phys. Rev. B **98**, 094304 (2018), DOI: [10.1103/PhysRevB.98.094304](https://doi.org/10.1103/PhysRevB.98.094304)
36. *Determining the local low-energy excitations in the Kondo semimetal $CeRu_4Sn_6$ using resonant inelastic x-ray scattering*
A. Amorese, K. Kummer, N. B. Brookes, O. Stockert, D. T. Adroja, A. M. Strydom, A. Sidorenko, H. Winkler, D. A. Zocco, A. Prokofiev, S. Paschen, M. W. Haverkort, L. H. Tjeng, and A. Severing
Phys. Rev. B **98**, 081116(R) (2018) (Rapid Communications), DOI: [10.1103/PhysRevB.98.081116](https://doi.org/10.1103/PhysRevB.98.081116)
35. *Superconductivity and hybrid soft modes in $TiSe_2$*
M. Maschek, S. Rosenkranz, R. Hott, R. Heid, D. A. Zocco, A. H. Said, A. Alatas, G. Karapetrov, S. Zhu, J. van Wezel, and F. Weber
Phys. Rev. B **94**, 214507 (2016), DOI: [10.1103/PhysRevB.94.214507](https://doi.org/10.1103/PhysRevB.94.214507)
34. *Strain-Driven Approach to Quantum Criticality in AFe_2As_2 with $A = K, Rb$, and Cs*
F. Eilers, K. Grube, D. A. Zocco, T. Wolf, M. Merz, P. Schweiss, R. Heid, R. Eder, R. Yu, J.-X. Zhu, Q. Si, T. Shibauchi, and H. v. Löhneysen
Phys. Rev. Lett. **116**, 237003 (2016), DOI: [10.1103/PhysRevLett.116.237003](https://doi.org/10.1103/PhysRevLett.116.237003)

33. *Evolution of quasiparticle excitations with critical mass enhancement in superconducting $A\text{Fe}_2\text{As}_2$ ($A = \text{K}, \text{Rb}, \text{and Cs}$)*
Y. Mizukami, Y. Kawamoto, Y. Shimoyama, S. Kurata, H. Ikeda, T. Wolf, D. A. Zocco, K. Grube, H. v. Löhneysen, Y. Matsuda, and T. Shibauchi
Phys. Rev. B **94**, 024508 (2016), DOI: [10.1103/PhysRevB.94.024508](https://doi.org/10.1103/PhysRevB.94.024508)
32. *Lattice dynamical properties of superconducting SrPt_3P studied via inelastic x-ray scattering and density functional perturbation theory*
D. A. Zocco, S. Krannich, R. Heid, K.-P. Bohnen, T. Wolf, T. Forrest, A. Bossak, and F. Weber
Phys. Rev. B **92**, 220504(R) (2015) (Rapid Communications), DOI: [10.1103/PhysRevB.92.220504](https://doi.org/10.1103/PhysRevB.92.220504)
31. *(***) Pressure dependence of the charge-density-wave and superconducting states in GdTe_3 , TbTe_3 and DyTe_3*
D. A. Zocco, J. J. Hamlin, K. Grube, J. -H. Chu, H. -H. Kuo, I. R. Fisher, and M. B. Maple
Phys. Rev. B **91**, 205114 (2015), DOI: [10.1103/PhysRevB.91.205114](https://doi.org/10.1103/PhysRevB.91.205114)
30. *Fermi Surface of KFe_2As_2 from Quantum Oscillations in Magnetostriction*
D. A. Zocco, K. Grube, F. Eilers, T. Wolf, and H. v. Löhneysen
JPS Conf. Proc. **3**, 015007 (2014), DOI: [10.7566/JPSCP.3.015007](https://doi.org/10.7566/JPSCP.3.015007)
29. *Persistent non-metallic behavior in Sr_2IrO_4 and $\text{Sr}_3\text{Ir}_2\text{O}_7$ at high pressures*
D. A. Zocco, J. J. Hamlin, B. D. White, B. J. Kim, J. R. Jeffries, S. T. Weir, Y. K. Vohra, J. W. Allen, and M. B. Maple
J. Phys.: Condens. Matter **26**, 255603 (2014), DOI: [10.1088/0953-8984/26/25/255603](https://doi.org/10.1088/0953-8984/26/25/255603)
28. *Probing the superconductivity of $\text{PrPt}_4\text{Ge}_{12}$ through Ce substitution*
K. Huang, L. Shu, I. K. Lum, B. D. White, M. Janoschek, D. Yazici, J. J. Hamlin, D. A. Zocco, P.-C. Ho, R. E. Baumbach, and M. B. Maple
Phys. Rev. B **89**, 035145 (2014), DOI: [10.1103/PhysRevB.89.035145](https://doi.org/10.1103/PhysRevB.89.035145)
27. *(***) Pauli-Limited Multiband Superconductivity in KFe_2As_2*
D. A. Zocco, K. Grube, F. Eilers, T. Wolf, and H. v. Löhneysen
Phys. Rev. Lett. **111**, 057007 (2013), DOI: [10.1103/PhysRevLett.111.057007](https://doi.org/10.1103/PhysRevLett.111.057007)
26. *Ferromagnetic quantum critical point in $\text{UCo}_{1-x}\text{Fe}_x\text{Ge}$*
K. Huang, J. J. Hamlin, R. E. Baumbach, M. Janoschek, N. Kanchanavatee, D. A. Zocco, F. Ronning, and M. B. Maple
Phys. Rev. B **87**, 054513 (2013), DOI: [10.1103/PhysRevB.87.054513](https://doi.org/10.1103/PhysRevB.87.054513)
25. *High pressure transport studies of the LiFeAs analogues CuFeTe_2 and Fe_2As*
D. A. Zocco, D. Y. Tütüin, J. J. Hamlin, J. R. Jeffries, S. T. Weir, Y. K. Vohra, and M. B. Maple
Supercond. Sci. Technol. **25**, 084018 (2012), DOI: [10.1088/0953-2048/25/8/084018](https://doi.org/10.1088/0953-2048/25/8/084018)
24. *Intrinsic dependence of T_c on hydrostatic (He-gas) pressure for superconducting LaFePO , PrFePO , and NdFePO single crystals*
N. J. Hillier, N. Foroozani, D. A. Zocco, J. J. Hamlin, R. E. Baumbach, I. K. Lum, M. B. Maple, and J. S. Schilling
Phys. Rev. B **86**, 214517 (2012), DOI: [10.1103/PhysRevB.86.214517](https://doi.org/10.1103/PhysRevB.86.214517)
23. *High-pressure study of non-Fermi liquid and spin-glass-like behavior in CeRhSn*
D. A. Zocco, A. Ślebarski, and M. B. Maple
J. Phys.: Condens. Matter **24**, 275601 (2012), DOI: [10.1088/0953-8984/24/27/275601](https://doi.org/10.1088/0953-8984/24/27/275601)
22. *Superconductivity, spin and charge order, and quantum criticality in correlated electron materials*
M. B. Maple, J. J. Hamlin, D. A. Zocco, M. Janoschek, R. E. Baumbach, B. D. White, I. R. Fisher and J.-H. Chu
EPJ Web of Conferences **23**, 00012 (2012), DOI: [10.1051/epjconf/20122300012](https://doi.org/10.1051/epjconf/20122300012)

21. *High pressure transport properties of the topological insulator Bi_2Se_3*
J. J. Hamlin, J. R. Jeffries, N. P. Butch, P. Syers, D. A. Zocco, S. T. Weir, Y. K. Vohra, J. Paglione, and M. B. Maple
J. Phys.: Condens. Matter **24**, 035602 (2012), DOI: [10.1088/0953-8984/24/3/035602](https://doi.org/10.1088/0953-8984/24/3/035602)
20. *Twofold enhancement of the hidden-order/large-moment antiferromagnetic phase boundary in the $\text{URu}_{2-x}\text{Fe}_x\text{Si}_2$ system*
N. Kanchanavatee, M. Janoschek, R. E. Baumbach, J. J. Hamlin, D. A. Zocco, K. Huang, and M. B. Maple
Phys. Rev. B **84**, 245122 (2011), DOI: [10.1103/PhysRevB.84.245122](https://doi.org/10.1103/PhysRevB.84.245122)
19. *Low temperature electrical resistivity of praseodymium at pressures up to 120 GPa*
J. J. Hamlin, J. R. Jeffries, G. Samudrala, Y. K. Vohra, S. T. Weir, D. A. Zocco, and M. B. Maple
Phys. Rev. B **84**, 033101 (2011), DOI: [10.1103/PhysRevB.84.033101](https://doi.org/10.1103/PhysRevB.84.033101)
18. *Interplay of Superconductivity, Magnetism, and Density Waves in Rare-Earth Tritellurides and Iron-Based Superconducting Materials*
D. A. Zocco, PhD Dissertation, Department of Physics, University of California San Diego (UMI Dissertations Publishing, 2011), [ProQuest Dissertations Publishing 2011.3466798](https://proquest.com/docview/13466798)
17. *Correlated electron state in $\text{Ce}_{1-x}\text{Yb}_x\text{CoIn}_5$ stabilized by cooperative valence fluctuations*
L. Shu, R. E. Baumbach, M. Janoschek, E. Gonzales, K. Huang, T. A. Sayles, J. P. Paglione, J. R. O'Brien, J. J. Hamlin, D. A. Zocco, P.-C. Ho, C. A. McElroy, and M. B. Maple
Phys. Rev. Lett. **106**, 156403 (2011), DOI: [10.1103/PhysRevLett.106.156403](https://doi.org/10.1103/PhysRevLett.106.156403)
16. *Search for pressure induced superconductivity in CeFeAsO and CeFePO iron pnictides*
D. A. Zocco, R. E. Baumbach, J. J. Hamlin, M. Janoschek, I. K. Lum, M. A. McGuire, A. S. Sefat, B. C. Sales, R. Jin, D. Mandrus, J. R. Jeffries, S. T. Weir, Y. K. Vohra, and M. B. Maple
Phys. Rev. B **83**, 094528 (2011), DOI: [10.1103/PhysRevB.83.094528](https://doi.org/10.1103/PhysRevB.83.094528)
15. *Unconventional T-H Phase Diagram in the Noncentrosymmetric Compound $\text{Yb}_2\text{Fe}_{12}\text{P}_7$*
R. E. Baumbach, J. J. Hamlin, L. Shu, D. A. Zocco, J. R. O'Brien, P.-C. Ho, and M. B. Maple
Phys. Rev. Lett. **105**, 106403 (2010), DOI: [10.1103/PhysRevLett.105.106403](https://doi.org/10.1103/PhysRevLett.105.106403)
14. *Signatures of pressure induced superconductivity in insulating $\text{Bi}_2\text{Te}_2\text{I}$*
T. Cuk, D. A. Zocco, H. Eisaki, V. Struzhkin, M. Grosche, M. B. Maple, and Z.-X. Shen
Phys. Rev. B **81**, 184509 (2010), DOI: [10.1103/PhysRevB.81.184509](https://doi.org/10.1103/PhysRevB.81.184509)
13. *The pressure-temperature phase diagram of URu_2Si_2 under hydrostatic conditions*
N. P. Butch, J. R. Jeffries, W. J. Evans, S. X. J. Chi, J. B. Leao, J. W. Lynn, S. V. Sinogeikin, J. J. Hamlin, D. A. Zocco, M. B. Maple
Mater. Res. Soc. Symp. Proc. **1264**, Warrendale, PA, 2010 (2010 MRS Spring), DOI: [10.1557/PROC-1264-Z10-03](https://doi.org/10.1557/PROC-1264-Z10-03)
12. *Evolution of Magnetic and Superconducting States in UCoGe With Fe and Ni Substitution*
J. J. Hamlin, R. E. Baumbach, K. Huang, M. Janoschek, N. Kanchanavatee, D. A. Zocco, and M. B. Maple
Mater. Res. Soc. Symp. Proc. **1264**, Warrendale, PA, 2010 (2010 MRS Spring), DOI: [10.1557/PROC-1264-Z12-04](https://doi.org/10.1557/PROC-1264-Z12-04)
11. *Pressure induced superconductivity in the charge density wave compound TbTe_3*
J. J. Hamlin, D. A. Zocco, T. A. Sayles, M. B. Maple, J. -H. Chu and I. R. Fisher
Phys. Rev. Lett. **102**, 177002 (2009), DOI: [10.1103/PhysRevLett.102.177002](https://doi.org/10.1103/PhysRevLett.102.177002)
10. *High-pressure, transport, and thermodynamic properties of CeTe_3*
D. A. Zocco, J. J. Hamlin, T. A. Sayles, M. B. Maple, J. -H. Chu and I. R. Fisher
Phys. Rev. B **79**, 134428 (2009), DOI: [10.1103/PhysRevB.79.134428](https://doi.org/10.1103/PhysRevB.79.134428)

9. *Hydrostaticity and hidden order: effects of experimental conditions on the temperature-pressure phase diagram of URu_2Si_2*
N. P. Butch, J. R. Jeffries, D. A. Zocco, and M. B. Maple
High Pressure Res. **29**, Issue 2, 335-343 (2009), DOI: [10.1080/08957950802564676](https://doi.org/10.1080/08957950802564676)
8. *Superconductivity in $LnFePO$ ($Ln = La, Pr, \text{ and } Nd$) single crystals*
R. E. Baumbach, J. J. Hamlin, L. Shu, D. A. Zocco, N. Crisosto, and M. B. Maple
New J. Phys. **11**, 025018 (2009), DOI: [10.1088/1367-2630/11/2/025018](https://doi.org/10.1088/1367-2630/11/2/025018)
7. *New correlated electron physics from new materials*
M. B. Maple, R. E. Baumbach, J. J. Hamlin, D. A. Zocco, B. J. Taylor, N. P. Butch, J. R. Jeffries, S. T. Weir, B. C. Sales, D. Mandrus, M. A. McGuire, A. S. Sefat, R. Jin, Y. K. Vohra, J. -H. Chu, and I. R. Fisher
Physica B **404**, 2924 (2009), DOI: [10.1016/j.physb.2009.07.141](https://doi.org/10.1016/j.physb.2009.07.141)
6. *Superconductivity in single crystals of $LaFePO$*
J. J. Hamlin, R. E. Baumbach, D. A. Zocco, T. A. Sayles, and M. B. Maple
J. Phys.: Condens. Matter **20**, 365220 (2008), DOI: [10.1088/0953-8984/20/36/365220](https://doi.org/10.1088/0953-8984/20/36/365220)
5. *Effect of pressure on the superconducting critical temperature of $La[O_{0.89}F_{0.11}]/FeAs$ and $Ce[O_{0.88}F_{0.12}]/FeAs$*
D. A. Zocco, J. J. Hamlin, R. E. Baumbach, M. B. Maple, M. A. McGuire, A. S. Sefat, B. C. Sales, R. Jin, D. Mandrus, J. R. Jeffries, S. T. Weir, and Y. K. Vohra
Physica C **468**, 2229 (2008), DOI: [10.1016/j.physc.2008.06.010](https://doi.org/10.1016/j.physc.2008.06.010)
Physica C Top Cited Article 2005-2010
4. *Bose-Einstein Condensation of $S = 1$ Ni spin degrees of freedom in $NiCl_2-4SC(NH_2)_2$*
V. S. Zapf, D. Zocco, B. R. Hansen, M. Jaime, N. Harrison, C. D. Batista, M. Kenzelmann, C. Niedermayer, A. Lacerda, and A. Paduan-Filho
Phys. Rev. Lett. **96**, 077204 (2006), DOI: [10.1103/PhysRevLett.96.077204](https://doi.org/10.1103/PhysRevLett.96.077204)
Featured in the Journal Club for Condensed Matter Physics, 2005
3. *Approaching field tuned quantum criticality in $CeIn_{3-x}Sn_x$*
A. V. Silhanek, D. Zocco, M. Jaime, N. Harrison, T. Ebihara
Physica B **378–380**, pp. 90-91 (2006), DOI: [10.1016/j.physb.2006.01.036](https://doi.org/10.1016/j.physb.2006.01.036)
2. *Uniaxial pressure dependence of the dynamical properties of vortex lines in $Bi-2212$ single crystals*
D. Zocco, M. Monteverde, M. Núñez-Regueiro and C. Acha
Physica B **354**, pp. 261-265 (2004), DOI: [10.1016/j.physb.2004.09.060](https://doi.org/10.1016/j.physb.2004.09.060)
1. *Uniaxial pressure dependence of the dynamical properties of vortex lines in $BSCCO$ single crystals*
D. Zocco, M. Monteverde, M. Núñez-Regueiro and C. Acha
Proceeding of the conference “Pushing Physics at Low Temperatures”
J. Low Temp. Phys. **135**, 165 (2004), DOI: [10.1023/B:JOLT.0000017045.07260.89](https://doi.org/10.1023/B:JOLT.0000017045.07260.89)

Selected invited talks at conferences and seminars

- *Correlation and topology in heavy fermion flat band systems*
APS March Meeting 2025 symposium “Emergent Flat Bands in Bulk Quantum Materials”, Anaheim, USA
March 18, 2025
- *Correlation-driven topological semimetals*
International Conference on Superconductivity and Magnetism, Fethiye, Turkey
April 29, 2024
- *Control of electronic topology in a strongly correlated electron system*
KITP Conference “Topology, Symmetry and Interactions in Crystals: Emerging Concepts and Unifying Themes”, Santa Barbara, USA
April 4, 2023
- *Controlling electronic topology in Weyl-Kondo semimetals*
APS March Meeting 2023 symposium “New frontiers at the Intersection of strong correlations and topology”, Las Vegas, USA
March 6, 2023
- *Materials at the intersection of strong electronic correlations and nontrivial topology*
Institute for Quantum Materials and Technologies, Karlsruhe Institute of Technology, Germany
January 31, 2023
- *Controlling electronic topology in a strongly correlated electron system*
Focus Workshop “Topological Materials: From Weak to Strong Correlations”, Dresden, Germany
April 13, 2022
- *Lattice dynamical properties of SrPt_3P studied via inelastic x-ray scattering and density functional perturbation theory*
International Conference Superstripes, Ischia, Italy
June 25, 2016
- *Multiband superconductivity and electronic correlations in $(\text{K,Rb,Cs})\text{Fe}_2\text{As}_2$ iron-based superconductors*
International Conference on Superconductivity and Magnetism, Fethiye, Turkey
April 26, 2016
- *Multiband superconductivity and electronic correlations in iron-based superconductors*
DFG/GRK 1621 group seminar, Technische Universität Dresden, Germany
January 12, 2016
- *Electronic correlations in AFe_2As_2 iron-based superconductors ($\text{A} = \text{K, Rb, Cs}$)*
International Conference Superstripes, Ischia, Italy
June 15, 2015
- *Interplay of superconductivity, charge order and magnetism in correlated electron materials*
Néel Institute seminar, Grenoble, France
September 23, 2014
- *Paramagnetic Limiting of the Upper Critical Field of Iron-Pnictide Superconductors*
International Conference on Superconductivity and Magnetism, Antalya, Turkey
April 29, 2014
- *Exploration of the H - T phase diagram of KFe_2As_2 via thermal expansion and magnetostriction*
High Magnetic Field Laboratory seminar, Dresden, Germany
December 6, 2012