浙江大学长聘教授（副教授）申报表

姓　名：	**MICHAEL SMIDMAN**
职工号：	**0014604**
单　位：	物理学院
所在一级学科：	物理学
申请长聘教职职位：	长聘副教授
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填报日期：　　年　月　日

一、简况

姓名	MICHAEL SMIDMAN	性别	男	出生年月	1988 年 02 月	国籍	英国
现党政职务				现工作单位		物理学院	
现聘岗位类别	百人计划研究员(自然科学 B 类)				聘任期限	自 2017-12-26 至 2023-12-31	

所在一级学科	物理学
所在二级学科	凝聚态物理
从事专业及专长	强关联电子体系和超导
最后学历、毕业学校、所学专业、学位及取得时间、导师姓名	博士研究生毕业 、英国华威大学、物理学、博士、2014-10、Geetha Balakrishnan

主要学术兼职	（兼任专业学会、协会职务、专业期刊编委等，请注名起讫年月）

个人简历（从大学开始，采用时间倒序方式填写，时间不间断）

学习进修经历	自何年月至何年月，在何地、何学校（何单位），何专业，学习、进修，导师 1.2010-09 至 2014-10, 英国华威大学, 物理系, 博士研究生毕业, Geetha Balakrishnan 2.2006-09 至 2010-07, 英国剑桥大学, 物理系, 硕士研究生毕业, Malte Grosche 3.2006-09 至 2010-07, 英国剑桥大学, 物理系, 大学毕业, Malte Grosche
工作经历	自何年月至何年月，在何地、何学校（系所）、何单位任职，任何职（海外职位英文表述） 1. 2017-12 至 2023-12, 中国, 浙江大学, 百人计划研究员 2. 2014-12 至 2017-11, 中国, 浙江大学, 博士后 学习、工作经历如果不连续请说明原因：

二、立德树人成效概述

2.1 在课程教学、科学研究、指导学生、参与学生社会实践和社团活动、担任班主任、德育导师、新生之友、招生就业等方面落实立德树人根本任务的情况和成效。

Throughout all aspects of my work, I have strived to cultivate moral character, especially in undergraduate students and postgraduate research students. As part of my undergraduate teaching, I have established a new 3 credit course about scientific writing (学术论文写作) which has been accredited as a high-level international course (高水平国际化课程). A major goal of the course is to help prepare undergraduate students for postgraduate research or other types of scientific career. A significant aspect of this is instilling students with an understanding of scientific ethics and the ethics of scientific publishing, as well as the responsibilities of scientists. These aspects are facilitated by the course format, whereby in addition to the lectures, one third of the teaching hours (16 hours) are dedicated to workshop sessions, allowing for discussion between peers, as well as between the instructor and students. The extended homework exercises are also a means for providing feedback in these and other areas. In addition, I have started teaching a general physics course for the Chu Kochen Honors College, which provides an introduction to university level physics for undergraduate students.

I have also supervised and mentored numerous postgraduate students throughout their research, including both students that I directly supervise, as well as other students at the Center for Correlated Matter. I encourage them to approach their work with integrity and an open mind, as well as ensuring that they implement the best ethical practices in all areas, including experimental data handling, manuscript preparation, and journal submission. Through working closely with them they are able to develop their written and oral English communication abilities, and gain a more international outlook. Two students that I directly supervised have graduated and successfully found employment, including one PhD student who is now a postdoctoral researcher at the National Institute of Extremely-Weak Magnetic Field Infrastructure in Hangzhou. In addition, I encourage them to take an active part in various domestic and international collaborations, which allows them to become familiar with the scientific and cultural environments of different countries, particularly the United Kingdom. I have travelled with postgraduate students to perform experiments at international neutron scattering and muon-spin relaxation facilities, such as the ISIS Neutron and Muon Source in the UK, and the Institut Laue-Langevin in France.

I have also played a major role in organizing academic exchanges between the Department of Physics at Zhejiang University and the Cavendish Laboratory at the University of Cambridge, whereby a graduate student had an extended visit to the laboratory of Professor Malte Grosche, where they performed experiments and actively participated in the Quantum Matter group at the Cavendish Laboratory. After their graduation from Zhejiang University, this student who I mentored became a postdoctoral researcher at the University of Augsburg. In addition, an undergraduate student also participated in one such exchange, which gave them valuable experience and international perspective in preparation for their future postgraduate studies.

I have also played an active role in the activities at the Center for Correlated Matter aimed at undergraduate students, providing information and experience of postgraduate research, allowing them to make a more informed choice about their future directions. These activities included lectures and discussions, as well as an opportunity to complete small projects at the Center for Correlated Matter while working closely with postgraduate students from the Center. These allowed for the gap between undergraduate and postgraduate studies to be bridged.

In addition, in 2022 I became a ZJU Tang Scholar (仲英青年学者), in which capacity I have participated in public welfare projects. In particular I started a series of English language communication activities based at Zhejiang University, which are held at the weekend. The target audience are middle and high school students who are interested

in improving their English language abilities, as well as learning about scientific concepts and the life and culture of the United Kingdom. It is hoped that through encountering the English language in a different context from that of typical English lessons at school, i.e. by learning about and discussing scientific topics, students will be able to improve the breadth of their English language abilities, which will help prepare them to use English proficiently in different situations that they may encounter in the future. In addition, I discuss a varied selection of scientific topics that can complement many of the ideas they learn in school, and introduce them to how scientists approach research. These help students broaden their outlook and gain appreciation for different cultures. I also participated in various activities related to the Caring Heart Club of Zhejiang University (浙江大学学生爱心社). In particular I attended meetings where I contributed advice to undergraduate club members as to how to tackle various problems and challenges that they have encountered throughout the course of their charitable activities.

2.2 近 3 年学校年度考核情况

2020 合格 2021 合格 2022 优秀

三、人才培养、教育教学工作概述

3.1 教育理念，本科教育教学、研究生教育教学等情况和成效

I have taught various courses for both graduate and undergraduate students. I designed and established a new 3 credit undergraduate course about scientific writing (学术论文写作), which I taught for the first time in spring/summer 2023, and has been accredited as a high-level international course (高水平国际化课程). The aim of the course is to give an overview of scientific writing, with a particular focus on the composition and publication of articles in peer-reviewed scientific journals written in the English language. A major aspect of the course is bridging the gap between undergraduate studies and scientific academic research, and therefore there is a particular focus on students becoming familiar with reading and searching for scientific literature, scientific ethics, and the peer review and scientific publication process. Students develop their scientific writing abilities through weekly practical workshops and extended writing assessments, which give scope for students to deepen their understanding of their areas of scientific interest.

I also jointly designed and taught a course for graduate students about strongly correlated electron systems, and I have also taught a Chu Kochen Honors College general physics course, undergraduate laboratory courses, and a scientific writing course for graduate students.

I currently supervise 5 graduate students, and two students that I supervised have successfully graduated (1 Masters and 1 PhD student), where the graduated Master's student (舒健威) is working as a school teacher, and the graduated PhD student (叶慧清) is a postdoctoral researcher at the National Institute of Extremely-Weak Magnetic Field Infrastructure in Hangzhou. I have also co-supervised the research of various other PhD students at the Center for Correlated Matter.

3.2 承担教学及人才培养情况

1.开设课程情况

授课名称	授课时间	授课对象	讲授课时数	授课人数	评估结果
1.学术论文写作, 2022-2023 春夏, 本科生, 48,17,暂无评价 2.普通物理学Ⅰ, 2022-2023 春夏, 本科生, 32,80,暂无评价 3.强关联电子体系, 2022-2023 春夏, 研究生, 17,19,n/a 4.强关联电子体系, 2021-2022 春夏, 研究生, 14,20,n/a 5.研究生论文写作指导, 2021-2022 春, 研究生, 16,65,4.7 6.近代物理实验Ⅱ, 2021-2022 春夏, 本科生, 48,36，21%-60% 7.近代物理实验Ⅱ, 2021-2022 春夏, 本科生, 48,32，21%-60% 8.近代物理实验Ⅱ, 2021-2022 春夏, 本科生, 48,35,61%-90% 9.近代物理实验Ⅰ, 2020-2021 秋冬, 本科生, 48,43,21%-60% 10.近代物理实验Ⅰ, 2020-2021 秋冬, 本科生, 48,39,61%-90% 11.近代物理实验Ⅰ, 2020-2021 秋冬, 本科生, 48,28,61%-90% 12.强关联电子体系, 2019-2020 春, 研究生, 17,20,n/a					

2. 指导本科生毕业论文（设计）情况

姓名	专业	年级	在候选人指导下获得的奖励
1., 无, ,			

3.指导研究生情况

姓名	研究生类型	专业	年级	在候选人指导下获得的奖励
1.韩淳, 博士研究生, 物理学, 2023, 2.单兆洋, 博士研究生, 物理学, 2022, 3.杨子汉, 博士研究生, 物理学, 2022, 4.苏大钧, 博士研究生, 物理学, 2021, 5.吴晋宇, 博士研究生, 物理学, 2021, 6.叶慧清, 博士研究生, 物理学, 2020, 7.舒健威, 硕士研究生, 物理学, 2019,				

4.教学学术情况

（包括国家规划教材编写、教学成果奖励、课程建设等方面的情况。有合作情形的，请注明个人贡献）

四、主要学术成就（含学术研究概述、代表性成果与贡献点，总体不超过 2000 字）

学术研究概述	（包括学术研究方向、创新点、贡献及代表性成果，不超过 500 字） My research is focused on studying novel quantum states in correlated materials, in particular through synthesizing new correlated and superconducting materials, characterizing the physical properties, and utilizing the microscopic probes of muon-spin relaxation/rotation and neutron scattering. I have achieved a series of important innovative research results, in particular related to quantum phase transitions and unconventional superconducting order parameters, and have published articles in high quality journals such as Nature, Reviews of Modern Physics, Physical Review Letters, Science China Physics, Mechanics & Astronomy, and PNAS. These achievements include: (1) Discovery of a ferromagnetic quantum critical point and strange metal behavior in a heavy fermion ferromagnet, breaking the consensus that such critical points do not exist [Nature 2020]. A series of follow-up studies utilizing microscopic probes such as neutron scattering were subsequently performed to reveal the origins of these phenomena [PRB 2021, Science Bulletin 2021, PRL 2021, PRB 2022]. (ii) Measuring the penetration depth of the first heavy fermion superconductor $CeCu_2Si_2$, and based on these results proposing a novel type of multiorbital d-wave superconductivity, which can explain all the experimental results on this compound [RMP 2023, PNAS 2018, Phil Mag 2018]. (iii) Making significant advances towards understanding the origin of time-reversal symmetry breaking in weakly correlated superconductors using techniques such as muon-spin relaxation/rotation and the tunnel-diode oscillator based method. This includes revealing that time-reversal symmetry breaking in Re-based superconductors is not related to broken inversion symmetry [PRL 2018], and discovering a new noncentrosymmetric superconductor CaPtAs with the rare combination of broken time reversal symmetry and a nodal superconducting gap [Science China: PMA 2020; PRL 2020], which provides a new direction for the study of noncentrosymmetric superconductors. Based on this series of results, an invited review article was written [JPCM 2020].
代表性成果及贡献点	（代表性成果及贡献点不超过 3 项，每项不超过 500 字。阐述重要创新成果、主要学术贡献及其科学价值或社会经济意义等，并列出相应的成果证据，如论著、项目、奖项、专利等已在后续表格中列出的成果，标明序号即可） **1. Discovery of a ferromagnetic quantum critical point and strange metal behaviour** While quantum critical points have been revealed in various antiferromagnets, experimental evidence for ferromagnetic quantum critical points (QCP) was lacking, and they were theoretically predicted to be impossible in clean systems. We overturned this general consensus by discovering the first example of a ferromagnetic quantum critical point in a clean system **[Nature 2020, MS co-corresponding author，90 SCI citations],** from our measurements of $CeRh_6Ge_4$, where the ferromagnetic transition is smoothly suppressed to a ferromagnetic QCP under 0.8 GPa of pressure. This is accompanied by strange metal behaviour with a linear in temperature resistivity and a logarithmically divergent specific heat coefficient. We performed a systematic series of follow-up studies in order to reveal the mechanisms for the ferromagnetic QCP in $CeRh_6Ge_4$, **[Science Bulletin 2021; PRL 2021; PRB 2021; CPL 2021; PRB 2022]**. In particular, I performed neutron scattering and muon-spin relaxation measurements on $CeRh_6Ge_4$, which revealed the vital role of the anisotropy of the crystal-field orbitals in giving rise to the magnetic anisotropy and anisotropic hybridization **[PRB 2021].** By demonstrating the existence of ferromagnetic QCPs and studying their properties, these works have opened up a new research direction for quantum phase transitions. They also provide new insights for

understanding the long-standing puzzle of strange metals, showing that strange metals occur in ferromagnets and that quantum entanglement is an important aspect. These findings quickly attracted the attention of international researchers, and were highlighted by various journals and media outlets including by Science [Science 367, 1440 (2020)], and the Science Foundation in China [Science Foundation in China 28, 53 (2020)], as well being a shortlisted candidate for the 2020 "中国十大科技进展新闻(候选新闻)". It stimulated numerous experts in quantum phase transitions to propose new theoretical models to explain the results, for example [PRL 124, 147201 (2020); PRL 125, 077001 (2020); PRB 102, 205132 (2020); SCMPA 65, 257211 (2022); PRB 104, 245132 (2021)].

2. New type of superconducting pairing state in the first heavy fermion superconductor $CeCu_2Si_2$

The heavy fermion superconductor $CeCu_2Si_2$ was the first unconventional superconductor to be discovered and for a long time it was believed to be a d-wave superconductor with line nodes in the superconducting gap, similar to the high temperature cuprate superconductors. This understanding was recently challenged by the observation of nodeless superconductivity in $CeCu_2Si_2$, posing the question as to the nature of the pairing state. We measured the penetration depth of $CeCu_2Si_2$ using the tunnel-diode oscillator based method which confirmed the previous observation of nodeless superconductivity, and from our analysis of the data we proposed a new type of $d + d$ pairing state that can explain all the apparently contradicting experimental results **[PNAS 2018, Phil Mag 2018]**. As a result of these findings, I am first author of a review article in Reviews of Modern Physics discussing the superconducting pairing state of $CeCu_2Si_2$, in which we show that the $d + d$ pairing state is the most plausible of the competing scenarios **[M. Smidman et al. Rev. Mod. Phys. 2023]**.

As well as significantly advancing the understanding of the first unconventional superconductor $CeCu_2Si_2$, and providing a strong candidate for resolving a significant unresolved question in the field, these findings also provide important insights for other classes of unconventional superconductors. In particular, they demonstrate new types of superconducting pairing states that are enabled by orbital degrees of freedom. The findings have been reported by various media outlets, including 'Superconductor Week'.

3. Revealing the mechanisms of time-reversal symmetry breaking in superconductors

Recently, evidence for time-reversal symmetry breaking has been found in several superconductors with otherwise conventional properties, and the origin of this unusual behaviour is generally unknown. I have used various techniques including muon-spin relaxation, the tunnel-diode oscillator based method, and neutron scattering in order to reveal the mechanisms behind time-reversal symmetry breaking in this class of superconductors. Using muon-spin relaxation, we demonstrated that both a noncentrosymmetric Nb-Re alloy and centrosymmetric elemental rhenium break time-reversal symmetry, showing that this phenomenon in Re-based superconductors is not due to a noncentrosymmetric crystal structure **[PRL 2018]**. Meanwhile, a novel triplet pairing state was also proposed to explain the time-reversal symmetry breaking in a family of topological nodal line semimetals **[npj QM 2022]**.

We discovered a new noncentrosymmetric superconductor CaPtAs, and using muon-spin relaxation/rotation and the tunnel-diode oscillator based method, we revealed that this exhibits the unusual combination of broken time-reversal symmetry and a nodal superconducting gap **[Science China: PMA 2020; PRL 2020]**. This work bridges the gap between different classes of time-reversal symmetry breaking superconductors,

	and can open a new direction in the study of noncentrosymmetric superconductors. Following these findings, researchers proposed CaPtAs to be a new type of topological superconductor, and the results were reported by articles in “phys.org” and “Superconductor Week”. As a result of this series of work, I have given invited talks at domestic and international conferences, and we wrote an invited review article on the topic of time-reversal symmetry breaking superconductivity **[JPCM 2020; 53 SCI citations]**.

五、科研主要情况（聘期内或近五年）

5.1 承担主要科研项目

项目名称	项目性质及来源	项目经费（括号内为本人主持经费）（单位万元）	项目起讫年月	本人排序

1.强关联体系, 纵向, 国家自然科学基金优秀青年科学基金项目, 200(200), 2023-01-2025-12, 1/1
2.几类重费米子化合物中的自旋阻挫及量子临界性研究, 纵向, 国家自然科学基金面上项目, 62(62), 2022-01-2025-12, 1
3.具有时间反演对称破缺且无能隙节点的超导配对态研究, 纵向, 国家自然科学基金面上项目, 64(64), 2019-01-2022-12, 1/1
4.非常规超导配对态研究, 纵向, 浙江省自然科学基金杰青项目, 80(80), 2022-01-2024-12, 1/1
5.f 电子体系中的演生量子态及其物态调控, 纵向, 国家重点研发计划, 2484(125), 2022-12-2027-11, 19/20
6.新型关联量子材料及其物态调控, 纵向, 浙江省重点研发计划, 790(50), 2021-01-2025-12, 9/16
7.重费米子体系中的演生量子态及其调控, 纵向, 国家重点研发计划, 2652(135), 2017-07-2022-06, 9/18
8.f 电子体系材料的奇异量子特性研究, 纵向, 科学挑战专题项目, 300(75), 2016-10-2021-09, 4/4

5.2 获奖情况

获奖项目名称	奖励名称及等级	授奖单位	获奖年月	本人排序

5.3 获得专利情况

专利名称	专利授权国、专利号	专利类型	授权公告年月	本人排序

5.4 代表性论文、著作情况（以浙江大学为第一署名单位，否则请注明）

论文：所有作者姓名（本人名字请加粗，通讯作者名字上用*标示），论文题目，发表期刊名称，发表年月，卷，期，起止页码。（共同一作或共同通讯作者请注明个人贡献）

1. Michael Smidman*, Oliver Stockert*, Emilian M. Nica, Yang Liu, Huiqiu Yuan*, Qimiao Si*, and Frank Steglich*, Colloquium: Unconventional fully gapped superconductivity in the heavy-fermion metal CeCu2Si2, Reviews of Modern Physics, 2023-09, 95, 3, 031002-（ 第一作者）

2. Bin Shen, Yongjun Zhang, Yashar Komijani, Michael Nicklas, Robert Borth, An Wang, Ye Chen, Zhiyong Nie, Rui Li, Xin Lu, Hanoh Lee, Michael Smidman*, Frank Steglich, Piers Coleman* & Huiqiu Yuan*, Strange-metal behaviour in a pure ferromagnetic Kondo lattice, Nature, 2020-03, 579, 7797, 51-55（ 共同通讯作者）

贡献描述: I supervised the synthesis and physical properties measurements. HY directed the overall project and pressure measurements. PC was responsible for theory parts.

3. (非浙大第一署名单位) T. Shang*, M. Smidman*, S. K. Ghosh, C. Baines, L. J. Chang, D. J. Gawryluk, J. A. T. Barker, R. P. Singh, D. McK. Paul, G. Balakrishnan, E. Pomjakushina, M. Shi, M. Medarde, A. D. Hillier, H. Q. Yuan, J. Quintanilla*, J. Mesot, and T. Shiroka*, Time-Reversal Symmetry Breaking in Re-Based Superconductors, Physical Review Letters, 2018-12, 212, 25, 257002-（ 共同通讯作者）

贡献描述: I performed muon measurements at ISIS facility, TS and TS measured at PSI facility. Results from two facilities were combined, JQ worked on theory.

4. Wu Xie, PeiRan Zhang, Bin Shen, WenBing Jiang, GuiMing Pang, Tian Shang, Chao Cao, Michael Smidman*, and HuiQiu Yuan*, CaPtAs: A new noncentrosymmetric superconductor, Science China Physics Mechanics & Astronomy, 2020-01, 63, 3, 237412-（ 共同通讯作者）

贡献描述: I identified the candidate material system and supervised sample synthesis and structural characterization. HY and I supervised the measurements.

5. (非浙大第一署名单位) T. Shang*, M. Smidman, A. Wang, L.-J. Chang, C. Baines, M. K. Lee, Z. Y. Nie, G. M. Pang, W. Xie, W. B. Jiang, M. Shi, M. Medarde, T. Shiroka, and H. Q. Yuan*, Simultaneous Nodal Superconductivity and Time-Reversal Symmetry Breaking in the Noncentrosymmetric Superconductor CaPtAs, Physical Review Letters, 2020-05, 124, 20, 207001-（ 其他作者）

6. J. W. Shu, D. T. Adroja, A. D. Hillier, Y. J. Zhang, Y. X. Chen, B. Shen, F. Orlandi, H. C. Walker, Y. Liu, C. Cao, F. Steglich, H. Q. Yuan, and M. Smidman*, Magnetic order and crystalline electric field excitations of the quantum critical heavy-fermion ferromagnet CeRh6Ge4, Physical Review B, 2021-10, 104, 14, L140411-（ 通讯作者）

7. Hang Su, Feng Du, Shuaishuai Luo, Zhiyong Nie, Rui Li, Wu Xie, Bin Shen, Yunfeng Wang, An Wang, Toshiro Takabatake, Chao Cao, Michael Smidman*, Huiqiu Yuan*, La4TX (T =u, Rh, Ir; X =l, In): A family of noncentrosymmetric superconductors with tunable antisymmetric spin-orbit coupling, Science China Materials, 2023-03, 66, 3, 1114-1123（ 共同通讯作者）

贡献描述: I identified the candidate material systems and supervised synthesis and measurements. HY directed the overall project.

8. Zhaoyang Shan, Pabitra K. Biswas*, Sudeep K. Ghosh*, T. Tula, Adrian D. Hillier, Devashibhai Adroja, Stephen Cottrell, Guang-Han Cao, Yi Liu, Xiaofeng Xu, Yu Song, Huiqiu Yuan, and Michael Smidman*, Muon spin relaxation study of the layered kagome superconductor CsV3Sb5, Physical Review Research, 2022-08, 4, 3, 033145-（ 共同通讯作者）

贡献描述: I directed the project, performed zero-field muon measurements and analysis. PKB and SKG responsible for TF-muon experiments and ML analysis.

9. M. Smidman*, C. Ritter, D. T. Adroja, S. Rayaprol, T. Basu, E. V. Sampathkumaran, and A. D. Hillier, Magnetic order in Nd2PdSi3 investigated using neutron scattering and muon spin relaxation, Physical Review B, 2019-10, 100, 13, 134423-（ 第一作者）

10. Guiming Pang, Michael Smidman, Jinglei Zhang, Lin Jiao*, Zongfa Weng, Emilian M. Nica, Ye Chen, Wenbing

Jiang, Yongjun Zhang, Wu Xie, Hirale S. Jeevan, Hanoh Lee, Philipp Gegenwart, Frank Steglich, Qimiao Si, and Huiqiu Yuan*, Fully gapped d-wave superconductivity in CeCu2Si2, Proceedings of the National Academy of Sciences of the United States of America, 2018-05, 115, 21, 5343-5347（ 其他作者）

著作：所有作者姓名（本人名字请加粗），书名，出版地，出版社，出版年月，总字数及个人贡献数（个人贡献数标注在括号内）（字数单位：万字）

5.5 担任国际学术组织重要职务及在国际学术会议大会报告、特邀报告等情况

1. Muon-spin relaxation studies of time-reversal symmetry breaking in superconductors, Muon User Meeting 2023, Oxford UK, 2023-09-11- 2023-09-12
2. Field-induced quantum criticality and evolution of the correlated state in CeRhIn5, 20 years of the 115's: past, present, and future, LANL USA (online), 2020-11-09- 2020-11-12
3. Time reversal symmetry breaking in fully-gapped superconductors, Theoretical and Experimental Magnetism Meeting (TEMM 2019), Abingdon UK, 2019-07-18 - 2019-07-19
4. On the Quantum Critical Paradigm in Correlated Antiferromagnets , 2018 International Conference on Magnetism (ICM2018), San Francisco USA, 2018-07-16 - 2018-07-20
5. Fermi Surface Reconstruction and Effective Mass Enhancement in CeRhIn5 at High Magnetic Fields, 2018 Research in High Magnetic Fields conference (RHMF2018), Santa Fe USA, 2018-06-24 - 2018-06-28

5.6 担任国内学术组织重要职务及在国内学术会议大会报告、特邀报告等情况

1. Ferromagnetic quantum point and strange metal behavior in CeRh6Ge4, 第十八届全国低温物理会议 (LT18), Ganzhou China, 2022-07-04 - 2022-07-08
2. Neutron scattering study of the quantum critical ferromagnet CeRh6Ge4, The 8th National Conference on Neutron Scattering (第八届全国中子散射会议), Dongguan China, 2020-11-11 - 2020-11-14
3. Time reversal symmetry breaking in fully-gapped superconductors, 5th Conference on Condensed Matter Physics (CCMP-2019)(第五届凝聚态物理会议), Liyang China, 2019-6-27 - 2019-6-30
4. Fully gapped d-wave superconductivity in the heavy fermion superconductor CeCu2Si2, Theoretical developments and experimental progresses in quantum matter: dynamics of quantum magnetism, Tsung-Dao Lee Institute China, 2019-08-26 - 2019-08-30

六、社会服务等情况（应包括学生工作、公共事务及获得荣誉等）

In 2022 I became a ZJU Tang Scholar (仲英青年学者), in which capacity I have participated in public welfare projects. In particular I started a series of English language communication activities based at Zhejiang University, which are held at the weekend. The target audience are middle and high school students who are interested in improving their English language abilities, as well as learning about scientific concepts and the life and culture of the United Kingdom.

七、其他能反映学术研究水平的突出业绩