



H T S C 2 0 2 2

PROGRAM BOOK

13th International
Conference on Materials
and Mechanisms of
Superconductivity &
High Temperature
Superconductors

July 17 - 22, 2022
Vancouver, BC
CANADA



m2s-2022.com

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Meeting Safely

Masks are highly encouraged where physical distancing is not possible and while not actively consuming food and beverages. Masks will be available at the registration desk for those who need one. Hand Sanitizing Dispensers are conveniently located throughout the facility and rooms and high-touch surfaces are regularly cleaned and disinfected.

Venue

Vancouver Convention Centre EAST
999 Canada Place, Vancouver, BC V6C 3B5

Wi-Fi

SSID: M2S 2022
Password: Vancouver



WELCOME TO M2S 2022

We would like to welcome you to the Materials and Mechanisms of Superconductivity (M2S) meeting for 2022. Since 1988, the M2S conference has, every three years, brought together researchers in condensed matter physics and quantum mechanics from around the world to share the latest research in the field of superconductivity. The first conference was held in Interlaken, Switzerland, shortly after the discovery of high temperature superconductivity by the Nobel Prize winners Johannes Georg Bednorz and Karl Alexander Muller. Subsequent meetings have been held in Palo Alto, Kanazawa, Grenoble, Beijing, Houston, Rio de Janeiro, Dresden, Tokyo, Washington, Geneva, and Beijing.

The phenomenon of superconductivity, with its twin properties of zero electrical resistivity and perfect diamagnetism, has fired up the imagination of researchers for over a century, driven myriad applications, and inspired the broader public. Discovered before the development of quantum mechanics, it has been a driver of theoretical physics, spawning the development of ideas and theoretical techniques reaching far beyond the limits of the field. It has also been a major driver of experimental techniques, leading to the development of many of the tools now central to condensed matter physics. The unique properties of superconductors also find their way into existing applications such as MRI machines. and offer many paths to future devices, such as qubits for quantum computing.

The aim of M2S-2022 is to bring together researchers across the full spectrum of activities in superconductivity, enabling exchange of ideas, fostering collaborations, and fueling future research. All aspects of research in the field are represented, including materials development, advances in theory and experiment, and research aimed at applications. The exciting discoveries and brand-new directions showcased in this meeting speak to the continuing richness and importance of this field.

After a globally challenging period, we are pleased to finally welcome you to Vancouver, British Columbia for M2S 2022.

Prof. Douglas Bonn
Chair



CONFERENCE POLICIES

Our commitment to Equity, Diversity and Inclusion (EDI) at M2S 2022

Since its inception in 1988, the International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors (M2S) conference has strived to bring together researchers, industry partners, academics and students in the area of Quantum Matter Physics and Quantum Mechanics from around the world to share their research and experience in the realm of superconductivity. Every three years, the honour of hosting this prestigious conference is passed on to a different research institute and this year, UBC is immensely proud to be hosting the 13th International M2S conference in Vancouver. Taking this opportunity, the M2S local organizing committee would like to acknowledge that we are situated on the traditional, ancestral, and unceded territories of the x^wməθk^wəyəm (Musqueam); səliłwətał (Tsleil-Waututh); and Sk̓wxwú7mesh Úxwumixw (Squamish) Nations. Please take a moment to read about these Nations and Peoples, to learn more about the land you will visit and its relationship to history.

In the last two years the local organizing committee has reflected deeply on the question: “How do we make this global conference inclusive and accessible for all?” This question became all the more important as the whole world was trying to collectively live through the myriad challenges posed by the global pandemic. Thus, the M2S advisory board, scientific program committee and local organizing committee members have tried to purposefully reflect their commitment to diversity, equity and inclusion in the following ways:

- Affirming our strong commitment to IUPAP policies and, constituting a committee comprising of three advisers to investigate any complaint pertaining to harassment at the conference.
- Bringing together a repository of resources for conference members to learn more about the history and contemporary issues related to the lands and Indigenous Peoples of the region (the BC Campus Pulling Together Foundations Guide; the Truth and Reconciliation Commission of Canada: Calls to Action and the UBC Indigenous Strategic Plan) and drawing attention to the rights of Indigenous people globally, as articulated in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Ensuring the inclusion of all genders, racialized peoples, and early to mid career researchers and entrepreneurs from industry and academia across different geographies in our organizing committee, program committee, advisory board as well as conference speakers (invited and contributed) and presenters

Building a special session on the ‘Future of Conferences’ featuring senior students, Postdocs, researchers, academics and industry partners for the first time in the M2S conference program.



M2S 2022 POLICY STATEMENT

M2S 2022 is committed to serving the principles of equity, diversity and inclusion and does not discriminate on the basis of race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, genetic characteristics, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered. These grounds for discrimination are also prohibited under the Canadian Human Rights Act. The M2S 2022 local organizing committee strongly rejects any kind of discriminatory activity during the event. Action will be taken against those who are found in violation of the terms stated herein.

The M2S Conference 2022 abides by the IUPAP Policies on Conferences.

Free Circulation of Scientists: The principle of the Universality of Science is fundamental to scientific progress.

This principle embodies freedom of movement, association, expression and communication for scientists, as well as equitable access to data, information and research materials. In pursuing its objectives with respect to the rights and responsibilities of scientists, the International Union of Pure and Applied Physics (IUPAP) actively upholds this principle, and, in so doing, opposes any discrimination on the basis of such factors as ethnic origin, religion, citizenship, language, political stance, gender, or age. IUPAP should only sponsor conferences and events at institutions and in countries that uphold this principle. If scientists are excluded from attending IUPAP-sponsored international conferences by a host institution or country on the basis of any of these factors, IUPAP should register its concern at the highest level of that institution or country, and should not sponsor any future events in that country until such exclusions have been eliminated.

Harassment at Conferences

It is the policy of the International Union of Pure and Applied Physics (IUPAP) that all participants at an IUPAP-supported conference will enjoy a comfortable experience, and that they will treat each other with respect at all times. The conference organizers will appoint two advisors at the conference who will consult with those who have suffered from harassment and who will suggest ways of redressing their problems, and an advisor who will counsel those accused of harassment.

For M2S 2022, the contacts are:

Mona Berciu: M2S 2022 Conference Chair and Professor, UBC: [berciu\[at\]phas.ubc.ca](mailto:berciu[at]phas.ubc.ca)

Marcel Franz: Deputy Scientific Director, Stewart Blusson Quantum Matter Institute and Professor, UBC: [franz\[at\]phas.ubc.ca](mailto:franz[at]phas.ubc.ca)

Doug Bonn: M2s 2022 Conference Chair and Professor, UBC: [bonn\[at\]phas.ubc.ca](mailto:bonn[at]phas.ubc.ca)

At the Stewart Blusson Quantum Matter Institute, we are pushing the boundaries of quantum materials research.



The future is quantum, and we're building it together. From materials for cleaner energy, faster computing, and better tools for health and wellbeing, to discoveries we have yet to imagine, our researchers are leading the way.

To join our team, study with us, or discover our research, visit qmi.ubc.ca



Organizing Committee



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University of British Columbia
Stewart Blusson Quantum Matter Institute

Conference Chair



MONA BERCIU
University of British Columbia
Stewart Blusson Quantum Matter Institute

Conference Chair



ANDREA DAMASCELLI
University of British Columbia
Stewart Blusson Quantum Matter Institute

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Catherine Pepin
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Joerg Schmalian
Manfred Sigrist
James Storey
Liling Sun
Louis Taillefer
Setsuko Tajima
Hide Takagi
John Tranquada
Erik van Heumen
Nanlin Wang
Yayu Wang
Hai-Hu Wen
Tao Xiang
Hong Yao



WELCOME TO VANCOUVER

Vancouver is the largest city in British Columbia and is Canada's main seaport on the Pacific Coast. Perched between the Salish Sea and the Coast Mountains, it is known world-wide for its natural beauty and limitless opportunity for outdoor recreation. It is also home to the Stewart Blusson Quantum Matter Institute, a world-leading research centre pushing the boundaries of quantum materials discovery and innovation at the University of British Columbia.

Although young, Vancouver is a vibrant multicultural city, owing to its location on the Pacific Rim, and the deep connection to the x^wməθk^wəy̓əm (Musqueam), Sk̓w̓x̓wú7mesh (Squamish), and Səl̓íl̓wítulh (Tseil-Waututh) Nations who have long cared for this, their traditional, ancestral and unceded land.

GENERAL INFORMATION A-Z

ACTIVITIES AND ATTRACTIONS

Vancouver offers an infinite number of sights, activities and event options. Want to play outside? Rent a kayak and tour the shoreline, cycle the city or hit the trails. Take advantage of beautiful golf courses, or ski or hike the North Shore Mountains just minutes away. Indoor activities? Tour local art galleries and museums, experience live theatre or a professional sporting event, shop along popular Robson Street or visit historic Gastown. Find out more [here](#).

CURRENCY

The Canadian dollar (symbol: \$; code: CAD) is the currency of Canada. It is abbreviated with the dollar sign \$, or sometimes C\$ to distinguish it from other dollar-denominated currencies. We recommend that visitors use Canadian currency when traveling within Canada. Currency can be exchanged at Canadian chartered banks, trust companies, credit unions, or at offices of foreign exchange brokers, but it is advised to have local currency on hand prior to arriving.

DIETARY REQUIREMENTS

Any dietary restrictions advised by the delegates are printed on the name badge (if previously advised). All food functions will be in a buffet form and will be labeled.

ELECTRICITY

Electricity in Canada is 110 volt AC (alternating current), as in the United States.

EXHIBITORS

Exhibits are located in Ballroom BC. Exhibit hours are during coffee/lunch breaks and the welcome reception on Sunday.

#100 - University of Sherbrooke (Institut Quantique)

#101 - SPECS -

#102 - Max Planck Institute

#103 - Scienta Omicron

#104 - Stewart Blusson Quantum Matter Institute

LANGUAGES

While Canada has two official languages – French and English – English is the predominant language in the west. Multilingual staff is commonly found in major tourism and business facilities.

POSTERS

Posters will be located in Ballroom BC on the ground floor and can be viewed during morning and afternoon breaks as well as lunch breaks. There is one official poster session scheduled during the lunch break on Monday to Thursday.

PROGRAM & SPEAKERS

To view the detailed program and speaker list, scan the QR Code.

Click on a session to see the presentations.



PUBLIC TRANSPORTATION

TransLink is Metro Vancouver's regional transport authority, and its public transit system is made up of buses, the SkyTrain, and the SeaBus. For schedules and connections, go to <https://translink.ca>.

Other ways to get around Vancouver:

- Hop-On Hop-Off Bus Tour – This is a great way to see the sights of Vancouver at your own pace with a 24 or 48-hour pass. You'll discover neighborhoods such as Gastown, Yaletown, and Chinatown.
- Bike – Vancouver has lots of dedicated bike lines throughout the city. You can choose to rent a bike or go on a bike tour of Vancouver.
- Walk – Make sure to pack your comfortable walking shoes. This is the best way to get around Vancouver.



SAFETY

Vancouver is one of the safest large cities in Canada, however, we recommend avoiding a walk through East Hastings Street between Abbott and Main Street.

SMOKING

The Vancouver Convention Centre is a non-smoking Facility. Smoking is prohibited in both indoor and outdoor spaces including areas within 7.5 meters of any door, window, or air intake.

TAXATION

Most purchases in British Columbia will be subject to a 7% Provincial Sales Tax (PST) and a 5% Goods and Services Tax (GST), with the exception of liquor (10% GST).

TIME ZONE

Vancouver is in the Pacific Time Zone.

TIPPING

Tipping is deeply ingrained in Canadian life. It is not mandatory but in certain situations, it is customary and expected. It is common to tip when paying for services in the hospitality industry such as eating out in a restaurant. 15-20% are common, less if the service was poor. Taxi/Uber drivers are typically given a tip of 10-15% depending on the service and length of trip. Licensed taxis generally use the meter, however in some instances, like trips to and from the airport, flat rates apply based on the area you are driving to or from.

VENUE

Vancouver Convention Centre EAST
999 Canada Place, Vancouver, BC V6C 3B5

WI-FI

Network: M2S 2022
Password: Vancouver

Monday, July 18, 2022

| | | |
|---------------------|-----------------------------------------|-----------------|
| 9:30 AM - 10:00 AM | Opening | Ballroom A |
| 10:00 AM - 10:30 AM | Coffee Break | Ballroom BC |
| 10:45 AM - 12:00 PM | Plenary / Prize Talk | Ballroom A |
| 12:00 PM - 1:30 PM | Poster Session 1 | Ballroom BC |
| | Lunch Break | Ballroom BC |
| 1:30 PM - 3:00 PM | 1.1 Cuprates - Pairing Mechanism 1 | Meeting Room 10 |
| | 1.2 Iron-Based SC | Meeting Room 11 |
| | 1.3 UTe ₂ - 1 | Ballroom A |
| | 1.4 Titanates | Meeting Room 12 |
| | 1.5 High Pressure - Hydrides | Meeting Room 13 |
| | 1.6 2D Transition Metal Dichalcogenides | Meeting Room 14 |
| 3:00 PM - 3:45 PM | Coffee Break | Ballroom BC |
| 3:45 PM - 5:15 PM | 2.1 Cuprates - Strange Metals 1 | Ballroom A |
| | 2.2 Topological Superconductivity | Meeting Room 10 |
| | 2.3 Iron-Based SC - Mechanism | Meeting Room 11 |
| | 2.4 Heavy Fermions | Meeting Room 12 |
| | 2.5 High Pressure | Meeting Room 13 |
| | 2.6 Quantum Computing and Devices | Meeting Room 14 |

Tuesday, July 19, 2022

| | | |
|------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 9:00 AM - 10:30 AM | 3.1 Cuprates - Strange Metals 2 | Ballroom A |
| | 3.2 Iron-Based SC Nematicity and Magnetism | Meeting Room 11 |
| | 3.3 UTe ₂ - 2 | Meeting Room 12 |
| | 3.4 Multilayer Cuprates | Meeting Room 14 |
| | 3.5 The Future of Conferences | |
| | ICAM Nonequilibrium Workshop 1: Higgs spectroscopy |  Meeting Room 13 |
| 10:30 AM - 11:00 AM | Coffee Break | Ballroom BC |
| 11:00 AM - 12:30 PM | 4.1 Cuprates - Pairing Mechanism 2 | Ballroom A |
| | 4.3 Nickelates - 1 | Meeting Room 11 |
| | 4.4 Superconducting Devices | Meeting Room 12 |
| | 4.5 Twisted Bilayers Beyond Graphene | Meeting Room 14 |
| | ICAM Nonequilibrium Workshop 2: Nonlinear coupling of collective modes |  Meeting Room 13 |
| 12:30 PM - 2:00 PM | Poster Session 2 | Ballroom BC |
| | Lunch Break | Ballroom BC |
| 2:00 PM - 3:30 PM | Prize Talks | Ballroom A |
| 3:30 PM - 4:15 PM | Coffee Break | Ballroom BC |
| 4:15 PM - 5:30 PM | Plenary / Prize Award Ceremony | Ballroom A |

Wednesday, July 20, 2022

| | | |
|------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 9:00 AM - 10:30 AM | 5.1 Cuprates - Charge Order 1 | Meeting Room 10 |
| | 5.2 Iron-Based SC - Novel Order | Meeting Room 11 |
| | 5.3 Superconducting Devices | Meeting Room 12 |
| | 5.4 Kagome - 1 | Ballroom A |
| | 5.5 Superconducting Surfaces and Interfaces | Meeting Room 14 |
| | ICAM Nonequilibrium Workshop 3: Driven Mott Insulators |  Meeting Room 13 |
| 10:30 AM - 11:00 AM | Coffee Break | Ballroom BC |
| 11:00 AM - 12:30 PM | 6.1 Overdoped Cuprates | Meeting Room 10 |
| | 6.2 Competing Order | Meeting Room 11 |
| | 6.3 Spin Fluctuations | Meeting Room 12 |
| | 6.4 Nickelates - 2 | Meeting Room 14 |
| | 6.5 Exotic Superconductivity in Twisted Bilayers | Ballroom A |
| | ICAM Nonequilibrium Workshop 4: Nonequilibrium Superconductivity |  Meeting Room 13 |
| 12:30 PM - 2:00 PM | Poster Session 3 | Ballroom BC |
| | Lunch Break | Ballroom BC |
| 2:00 PM - 3:30 PM | Plenary | Ballroom A |
| 3:30 PM - 4:15 PM | Coffee Break | Ballroom BC |
| 4:15 PM - 5:00 PM | Plenary | Ballroom A |

Thursday, July 21, 2022

| | | |
|------------------------|-----------------------------------------------|-----------------|
| 9:00 AM - 10:30 AM | 7.1 Cuprates - Charge Order 2 | Ballroom A |
| | 7.3 Bulk Applications | Meeting Room 11 |
| | 7.4 Kagome - 2 | Meeting Room 12 |
| | 7.5 Cuprates - Transport | Meeting Room 13 |
| 10:30 AM - 11:00 AM | Coffee Break | Ballroom BC |
| 11:00 AM - 12:30 PM | 8.1 Cuprates - Charge Order 3 | Meeting Room 10 |
| | 8.2 Topological Superconductors | Meeting Room 11 |
| | 8.3 Superconductor-Metal Transition | Meeting Room 12 |
| | 8.4 Ruthenates | Ballroom A |
| | 8.5 Vortex Matter and Bulk Applications | Meeting Room 13 |
| | 8.6 Heavy Fermions and Non-Centrosymmetric SC | Meeting Room 14 |
| 12:30 PM - 2:00 PM | Poster Session 4 | Ballroom BC |
| | Lunch Break | Ballroom BC |
| 2:00 PM - 3:30 PM | Prize Talks | Ballroom A |
| 3:30 PM - 4:15 PM | Coffee Break | Ballroom BC |
| 4:15 PM - 5:00 PM | Plenary | Ballroom A |

Friday, July 22, 2022

| | | |
|------------------------|----------------------------------------------|-----------------|
| 9:00 AM - 10:30 AM | 9.1 Cuprates - Low Energy Excitations | Meeting Room 10 |
| | 9.2 Kagome and Iron-Based | Meeting Room 11 |
| | 9.4 Vortex Matter | Meeting Room 13 |
| | 9.5 Cuprates - Phase Diagram | Ballroom A |
| | 9.6 Current Topics 1 | |
| 10:30 AM - 11:00 AM | Coffee Break | Ballroom BC |
| 11:00 AM - 12:30 PM | 10.1 Cuprates - Pseudogap Phase | Ballroom A |
| | 10.2 Current Topics 2 | Meeting Room 14 |
| | 10.3 Transition Metal Sulfides and Selenides | Meeting Room 11 |
| | 10.4 Phenomena in Fields | Meeting Room 12 |
| | 10.6 Materials and Mechanisms | Meeting Room 13 |
| 12:30 PM - 1:30 PM | Lunch Break | Ballroom BC |
| 1:30 PM - 3:00 PM | Plenary | Ballroom A |
| 3:00 PM - 3:30 PM | Coffee Break | Ballroom BC |
| 3:30 PM - 4:15 PM | Plenary | Ballroom A |
| 4:15 PM - 4:30 PM | Closing | Ballroom A |

Welcome Reception

July 17, 2022 | 6:00pm - 8:00pm | Ballroom BC | Vancouver Convention Centre East

To kick off the conference, we invite all delegates to our reception on Sunday, July 17 for a welcome drink and snacks.

Opening

July 18, 2022 | 9:30am | Ballroom A | Vancouver Convention Centre East

The M2S Conference will be opened by Elder Bob Baker and The Eagle Song Dancers

Bob Baker is an elder and co-founder and Spokesperson for S'pakwus Slolem (Eagle Song), the most reputable Dance Group of the Squamish Nation. Bob has been exercising his culture through singing, dances, and various presentations for over 35 years. Accomplishments range from revival of sea-going canoes and traditions to cultural projects such as the 27 ft. grandmother welcome figure at Ambleside Beach Park in North Vancouver. Bob was proud to be part of the Vancouver 2010 Winter Olympic Opening Ceremonies.

The Eagle Song Dancers are a colourful troupe that has performed throughout B.C., across Canada, and internationally at cultural festivals in such countries as Switzerland, Taiwan, and Japan. They are well known for their presentations at the Hiwus Feast House on top of Grouse Mountain and have entertained many tourists with their beautiful mask dances. The dance group consists of elders and youth of the Squamish Nation.

Prize Dinner – Private Dinner, invitation only!

July 19, 2022 | 6:30 – 9:00 PM | Glowbal (Gold Room A)

590 West Georgia Street, Vancouver, BC V6B 2A3 | P: 604-602-0835

Conference Dinner

July 20, 2022 | 7:00pm - 9:00pm | Ballroom BC | Vancouver Convention Centre East

The conference dinner is not included in your conference registration, but tickets had to be purchased separately.

Tour the Stewart Blusson Quantum Matter Institute

July 21, 2022 | evening

More information will be provided at the QMI (#104) booth in Ballroom BC.

Vancouver Activities

A cosmopolitan city right on the edge of nature, Vancouver makes it easy to combine an urban getaway with outdoor adventure. From family-friendly fun to thrill-seeking exploits; from marine exploring to mountaintop luxury, you'll find plenty of things to do in Vancouver. Don't forget to visit the website of 'Destination Vancouver' for lots more [things to do!](#)

[Book in advance and save!](#)

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Exhibitors



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SPECSGROUP

Advancing physics across international boundaries for the past 100 years

INTERNATIONAL COMMISSIONS

- C1: Commission on Policy and Finance
- C2: Commission on Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants
- C3: Statistical Physics
- C4: Astroparticle Physics
- C5: Low Temperature Physics
- C6: Biological Physics
- C8: Semiconductors
- C9: Magnetism
- C10: Structure and Dynamics of Condensed Matter
- C11: Particles and Fields
- C12: Nuclear Physics
- C13: Physics for Development
- C14: Physics Education
- C15: Atomic, Molecular, and Optical Physics
- C16: Plasma Physics
- C17: Laser Physics and Photonics
- C18: Mathematical Physics
- C19: Astrophysics
- C20: Computational Physics

AFFILIATED COMMISSIONS

- AC1: International Commission for Optics
- AC2: International Commission on General Relativity and Gravitation
- AC3: International Commission for Acoustics
- AC4: International Commission on Medical Physics

WORKING GROUPS

- WG1: International Committee for Future Accelerators (ICFA)
- WG2: Communication in Physics
- WG5: Women in Physics
- WG7: International Committee on Ultrahigh Intensity Lasers (ICUIL)
- WG9: International Cooperation in Nuclear Physics (ICNP)
- WG10: Astroparticle Physics International Committee (ApPIC)
- WG11: Gravitational Wave International Committee (GWIC)
- WG12: Energy
- WG13: Newtonian constant of Gravitation
- WG14: Accelerator Science
- WG15: Soft Matter
- WG16: Industry
- WG17: Centenary

AIMS

- To stimulate and promote international cooperation, communication, research and education in physics;
- To foster inclusiveness and diversity in physics;
- To uphold openness, honesty and integrity in the practice, application and promotion of physics;
- To support the free circulation of scientists;
- To promote international agreements on symbols, units and nomenclature; and cooperating with other organizations on disciplinary and interdisciplinary problems.
- To help in the application of physics toward solving problems of concern to humanity.

2022

The yearlong **CENTENARY** celebrations will:

- Increase awareness of physics discoveries and the close ties among physicists at research centres globally.
- Stimulate worldwide interest in physics and science, as a tool for education and a motor of innovation, technology & economic development.
- Reach out to the global physics community, national science organisations, policy-makers, societies, students, families and the general public.



Conference Sponsorship

Each year, IUPAP sponsors and endorses ~ 50 conferences annually with special attention given to those held in developing countries.



Inter Union Relations



Young Scientist Awards & Commission Awards

~200 prizes have been awarded in the last 10 years



Contact Us

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HEIKE KAMERLINGH ONNES PRIZE

The Prize was established in 2000 by the organizers of the International Conference on the Materials and Mechanisms of Superconductivity (M2S) and is sponsored by Elsevier, Publisher of Physica C - Superconductivity and its Applications. The Prize recognizes outstanding experiments which illuminate the nature of superconductivity other than materials.

Recipients 2022

The 2022 Prize committee has decided that Prof. Bernhard Keimer (Max Planck Institute for Solid State Research, Stuttgart, Germany), Prof. Giacomo Ghiringhelli (Physics Department, Politecnico di Milano, Italy) and Prof. Pengcheng Dai (Rice University, Houston, USA) will share the 2022 Kamerlingh-Onnes Prize "for experiments determining spin and charge correlations in high temperature superconductors using x-ray and neutron scattering".

BERND T. MATTHIAS PRIZE

The Prize, created in 1989 by friends and colleagues and initially sponsored by AT&T Bell Labs, is now accepting nominations for the 2022 award. The Matthias Prize is awarded in recognition of innovative contributions to the material aspects of superconductivity.

Recipient 2022

The committee for the Bernd T. Matthias Prize has selected the recipient for 2022, Dr. Mikhail Erements of the Max Planck Institute for Chemistry for his pioneering studies of superconductivity in hydrogen-rich compounds under high pressure with $T_c > 200$ K.

JOHN BARDEEN PRIZE

The Prize was established in 1991 by the organizers of the International Conference on the Materials and Mechanisms of Superconductivity (M2S) in honor of Dr. John Bardeen for "theoretical work that has provided significant insights on the nature of superconductivity and has led to verifiable predictions". This Prize is funded by the Physics Department at the University of Illinois

Recipients 2022

The 2022 John Bardeen Prize is awarded to Jörg Schmalian (Karlsruher Institute of Technology), Mohit Randeria, (The Ohio State University), and Peter Hirschfeld (University of Florida) "For pioneering theoretical work that has provided significant insights on the nature of superconductivity, its realization in strongly correlated systems, and experimental probes of unconventional superconductors."

Monday, July 18

Vidya Madhavan

STM studies of the heavy fermion superconductor UTe₂

Tuesday, July 19

Harold Hwang

Superconductivity in the Infinite-Layer Nickelates

Wednesday, July 20

Allan Macdonald

Magnetism and Superconductivity in Strongly Correlated Graphene

Marcel Franz

High-temperature topological superconductivity in twisted double-layer copper oxides

Pablo Jarillo-Herrero

The Magic of Moiré Quantum Matter

Thursday, July 21

Roser Valenti

Topological Phenomena in Fe-based superconductors: The case of CaKFe₄As₄

Friday, July 22

Andrew Millis

Mechanisms of superconductivity: what do we know, what do we think we know, and what would we like to know

Brad Ramshaw

The Planckian Limit: a Fundamental Bound on Electron Scattering

Stuart Brown

Unconventional Superconductivity, Van Hove Physics, and Magnetism in Stressed Sr₂RuO₄

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