# 第28回IUPAP統計物理学国際会議 (STATPHYS 28) の報告

お茶の水女子大学 基幹研究院

出口 哲生

拡大物性委員会(日本物理学会2023年年会) 2023年3月23日

### 2023年8月にハイブリッド会議を開催

ハイブリッド会議=現地+オンライン

日程: 2023年8月7日(月) - 8月11日(金)

会場: 東京大学本郷キャンパス(安田講堂 他)

事前の予想: 現地参加 **300** 名、オンライン参加 **500**名 であった。

• 3月14日に発表申込み締切の結果: 一般講演とポスターの申し込み数 1040件(過去最多の可能性大)

(一般講演約800件、ポスター約250件)

- 3月15日-4月15日 トピックス委員会(25名)による査読(一般講演の審査委員会)
- 査読結果の通知 4月30日
- 発表総数は約1100に近い見込み

他に基調講演8件、招待講演40件、Early Career Scientist賞講演3件、ボルツマン賞講演2件 計53件 さらに、故川崎恭治先生、K. Binder, M.E. Fisher, B. Alder の追悼講演の企画

ただし、現地参加とオンライン参加の内訳はまだ不明。海外航空運賃が上昇したため、予算的にはまだ厳しい。

- 一般の方々への研究紹介 市民公開講座:西森秀稔氏(東工大名誉教授)「量子コンピュータと量子アニーリング(仮題) |
- 若手(特に海外)への金銭的支援(トラベルサポート)
- 山田科学振興財団からの支援、 日本学術会議の支援、そしてIUPAPからも支援の見込み
- ・ 日本物理学会、日本学術会議、第28回IUPAP統計物理学国際会議組織委員会の共同主催
- サテライト会議 9件

# 世界各地からの参加希望者

Algeria	1	Israel	19
	_	<b>—</b>	
Argentine	4	Italy	46
Australia	3	Japan	411
Austria	8	Kazakhstan	1
Belgium	5	Korea	75
Brazil	11	Lebanon	1
Canada	6	Luxembourg	7
Chile	3	Mexico	14
China	63	Netherlands	5
Colombia	3	Norway	2
Czech Repub	2	Philippines	1
Denmark	1	Poland	8
Finland	3	Portugal	6
France	39	Russia	5
Germany	61	Singapore	10
Hong Kong	14	Slovakia	4
Hungary	2	South Africa	1
India	78	Spain	53
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Sweden	3
Switzerland	8
Taiwan	19
Thailand	1
Turkey	1
UK	16
Ukraine	1
United Arab	1
United State	35
	l

# 分野別応募数: 非平衡分野が最多

カテゴリ	登録数合計	一般投稿者		依頼投稿者		
פבדת	豆球数口部	Oral	Poster	依頼数	完了	未完了
Plenary	2	<u>0</u>	<u>0</u>	<u>10</u>	2	<u>8</u>
Topic 1: General and mathematical aspects	<u>79</u>	<u>60</u>	<u>18</u>	4	1	<u>3</u>
Topic 2: Out-of-equilibrium statistical physics	<u>206</u>	<u>154</u>	<u>49</u>	<u>6</u>	<u>3</u>	<u>3</u>
Topic 3: Quantum many-body systems and quantum fluids	104	<u>78</u>	24	4	2	2
Topic 4: Disordered and glassy systems	<u>106</u>	<u>91</u>	<u>15</u>	<u>5</u>	<u>0</u>	<u>5</u>
Topic 5: Biological physics	139	<u>110</u>	<u>29</u>	<u>6</u>	<u>0</u>	<u>6</u>
Topic 6: Soft matter	<u>152</u>	112	<u>38</u>	2	2	<u>5</u>
Topic 7: Nonlinear physics	<u>82</u>	<u>56</u>	22	4	4	<u>0</u>
Topic 8: Interdisciplinary and complex systems	<u>191</u>	<u>136</u>	<u>55</u>	7	<u>0</u>	7

## 基調講演の時間は現地参加に、授賞式は欧州に合わせる

Tokyo (JST)	7 Aug. (Mon)	8 Aug. (Tue)	9 Aug. (Wed)	10 Aug. (Thu)	11 Aug. (Fri)	EU (CET)	US, NY (CDT) U	JS, LA (PDT)	China (CST)	India (IST)
10:00		9:40-10:00 Diversity and Inclusion	9:30-11:30 Parallel	9:40-10:00 Human Rights Session	9:30-11:30 Parallel	2:00	21:00	18:00	9:00	6:30
10.00	10:00-11:30 Plenary	10:00-11:30 Plenary	rafallel	10:00-11:30 Plenary	Farallel	2.00	21.00	16.00	9.00	0.30
11:00						3:00	22:00	19:00	10:00	7:30
12:00	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break	4:00	23:00	20:00	11:00	8:30
13:00	13:00-14:30	13:00-14:30	13:00-14:00	13:00-14:00	13:00-14:00	5:00	0:00	21:00	12:00	9:30
	Poster Session	Poster Session	Parallel	Parallel	Parallel					
14:00		(in-person)	14:15-15:30	14:15-15:30	14:15-15:30	6:00	1:00	22:00	13:00	10:30
15:00	Coffee Break 15:00-17:00	Coffee Break 15:00-17:00	Parallel	Parallel	Parallel	7:00	2:00	23:00	14:00	11:30
	Parallel	Parallel	Coffee Break	Coffee Break	Coffee Break	•				
16:00			16:00-16:20	16:00-17:30	16:00-17:30	8:00	3:00	0:00	15:00	12:30
			Award Ceremony	Parallel	Plenary					
17:00			16:30-18:00			9:00	4:00	1:00	16:00	13:30
10.00	17:30-19:30	17:30-19:30 Parallel	Medalist Lecture		17:30-18:00 Closing	10.00	5.00	0.00	17.00	14.00
18:00	Parallel	Parallel	18:20-19:50	18:00-20:00		10:00	5:00	2:00	17:00	14:30
19:00			Memorial	Banquet		11:00	6:00	3:00	18:00	15:30
20:00						12:00	7:00	4:00	19:00	16:30
21:00						13:00	8:00	5:00	20:00	17:30
		21:30-23:00	21:30-23:00		Plenary: 8					
22:00		Poster Session	Online Events		invited: 43	14:00	9:00	6:00	21:00	18:30
23:00		(online)	(Women in Physics)		contributed: 410	15:00	10:00	7:00	22:00	19:30
25.00						15.00	10.00	7.00	22.00	19.50

12:00-13:00 C3 Meeting 13:30-15:00 Public Lecture

## サテライト会議は9件(基研、台湾、香港、韓国、インドなど)

## **Satellite Meeting**

In addition to the main event, a series of satellite meetings will be staged in the period preceding and following the conference.

YSF-YITP symposium "Perspectives on Non-Equilibrium Statistical Mechanics: The 45th Anniversary Symposium of Yamada Science Foundation"

### Organizers:

Hisao Hayakawa (YITP, Chair), Keiji Saito (Keio U.), Shin-ichi Sasa (Kyoto U.), Masaki Sano (Shanghai Jiao Tong U./U. of Tokyo), Kazumasa A. Takeuchi (U. of Tokyo), Hal Tasaki (Gakushuin U.), Tetsuo Deguchi (Ochanomizu U.)

Date: August 3-5, 2023

Venue: Yukawa Institute for Theoretical Physics, Kyoto University

Contact: to be updated

Frontiers in nonequilibrium physics: active matter, topology and beyond

### Organizers:

Kyogo Kawaguchi (RIKEN), Daiki Nishiguchi (U. of Tokyo), Ken Shiozaki (Kyoto U.), Tomoki Ozawa (Tohoku U.), Julien Tailleur (MIT), Hugues Chaté (CEA-Saclay)

**Date:** July 31 – August 2, 2023

Venue: Yukawa Institute for Theoretical Physics, Kyoto University

Contact: Kyogo Kawaguchi (kyogo.kawaguchi@riken.jp)

Collective Phenomena in complex systems: problems inspired by Ecology and Evolution

### Organizers:

Seung Ki Baek (Pukyong National University), Hawoong Jeong (KAIST), János Kertész (Central European University), Beom Jun Kim (Sungkyunkwan University), Hiraku Nishimori (Meiji University), Fumiko Ogushi (Osaka University), Hye Jin Park (Inha University), Takashi Shimada (The University of Tokyo)

Date: August 12-14, 2023

Venue: Tokyo, Japan (to be confirmed)

Contact: Fumiko Ogushi (ogushi@sigmath.es.osaka-u.ac.jp), Hye Jin Park (hyejin.park@inha.ac.kr)

### Emergence in biological networks

### Organizers:

Keita Kamino (Academia Sinica), Hong-Yan Shih (Academia Sinica), Sheng-hong Chen (Academia Sinica), Kuo-An Wu (National Tsing Hua University), Chien-Jung Lo (National Central University), Keng-hui Lin (Academia Sinica), Hsuan-Yi Chen (National Central University), Pik-Yin Lai (National Central University), Cheng-Hung Chang (National Yang Ming Chiao Tung University)

Date: July 31 - August 2, 2023

Venue(on-site and online): National Center for Theoretical Science, Taipei

Contact: Cheng-Hung Chang (chchang@nycu.edu.tw), Keita Kamino (kkamino@gate.sinica.edu.tw), Hong-Yan Shih

(hongyan@gate.sinica.edu.tw)

Statistical physics of inverse problems in complex systems

Organizers: Tiago Peixoto (CEU, Vienna, Chair), Tatsuro Kawamoto (AIST, Tokyo)

**Date:** August 4, 2023 **Venue:** AIST, Tokyo

Contact: Tiago Peixoto (peixotot@ceu.edu)

### Statistical Physics and Information-Processing in Living Systems

**Organizers:** Nen Saito (Hiroshima U.) Chikara Furusawa (U. of Tokyo/RIKEN), Shuji Ishihara (U. of Tokyo), Ayaka Sakata (Inst. Stat. Math.), Yusuke Himeoka (U. of Tokyo), Satoshi Sawai (U. of Tokyo), Yusuke Maeda (Kyushu U.)

Date: August 3-5, 2023

Venue: Komaba campus, the university of Tokyo

Contact: Nen Saito (nensaito@hiroshima-u.ac.jp), Chikara Furusawa (furusawa@phys.s.u-tokyo.ac.jp)

### Unifying Themes in Complex Systems Dynamics and Machine Learning

**Organizers:** Lei-Han Tang (HKBU, Chair), Emily SC Ching (CUHK, Co-Chair), Changsong Zhou (HKBU, Co-Chair), Liang Dai (CityU), Xiongfei Fu (SIAT), Chi-Hang Lam (PolyU), Xuefei Li (SIAT), Jade Shi (HKBU), Qianyuan Tang (HKBU), Liang Tian (HKBU), Xiangze Zeng (HKBU), Rui Zhang (HKUST)

Date: August 2-5, 2023

Venue: Hong Kong Baptist University

Contact: Department of Physics Hong Kong Baptist University (statphyhk2023@hkbu.edu.hk)

#### **New Frontiers in Complex Networks**

**Organizers:** Byungnam Kahang (Korea Institute of Energy Technology), Yamir Moreno (University of Zaragoza), Hawoong Jeong (KAIST), Cheol-Min Ghim (UNIST), Deok-Sun Lee (KIAS), Kwang-II Goh (Korea University), Seung Ki Baek (Pukyong National University)

Date: August 2-5, 2023

**Venue:** Pukyong National University, Busan, Korea **Contact:** Byungnam Kahng (bkahng@kentech.ac.kr)

### Perspectives in Nonlinear Dynamics

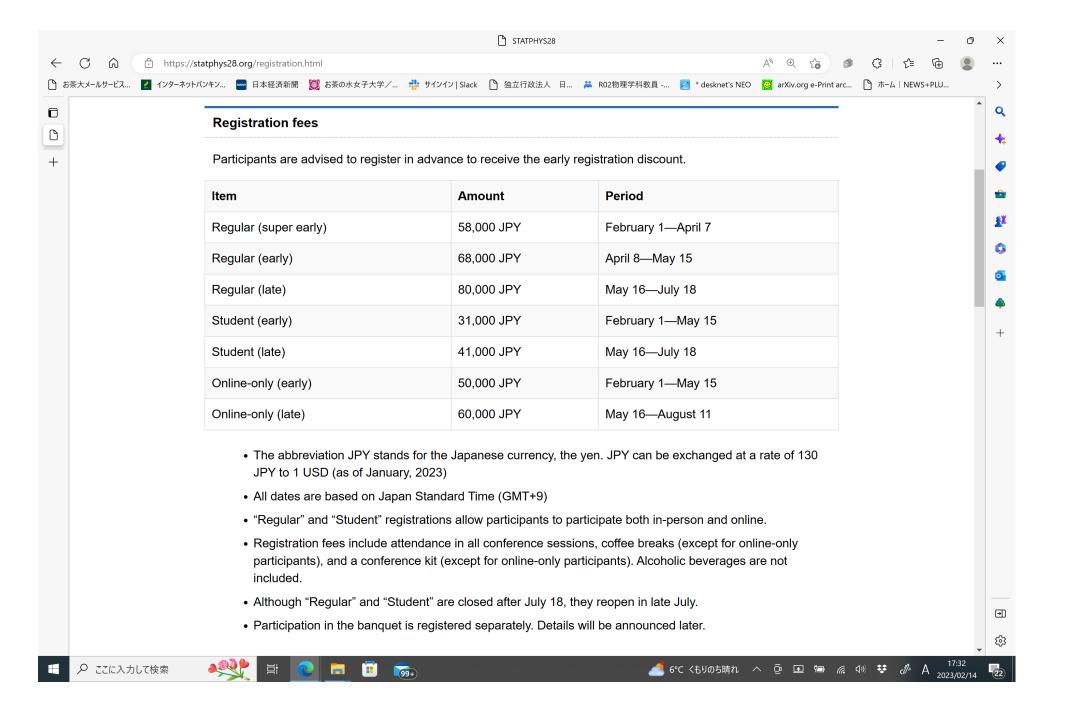
Organizers: Stefano Boccaletti (Firenze), Hilda Cerdeira (Sao Paolo), Sayan Gupta (Chennai), Neelima Gupte (Chennai),

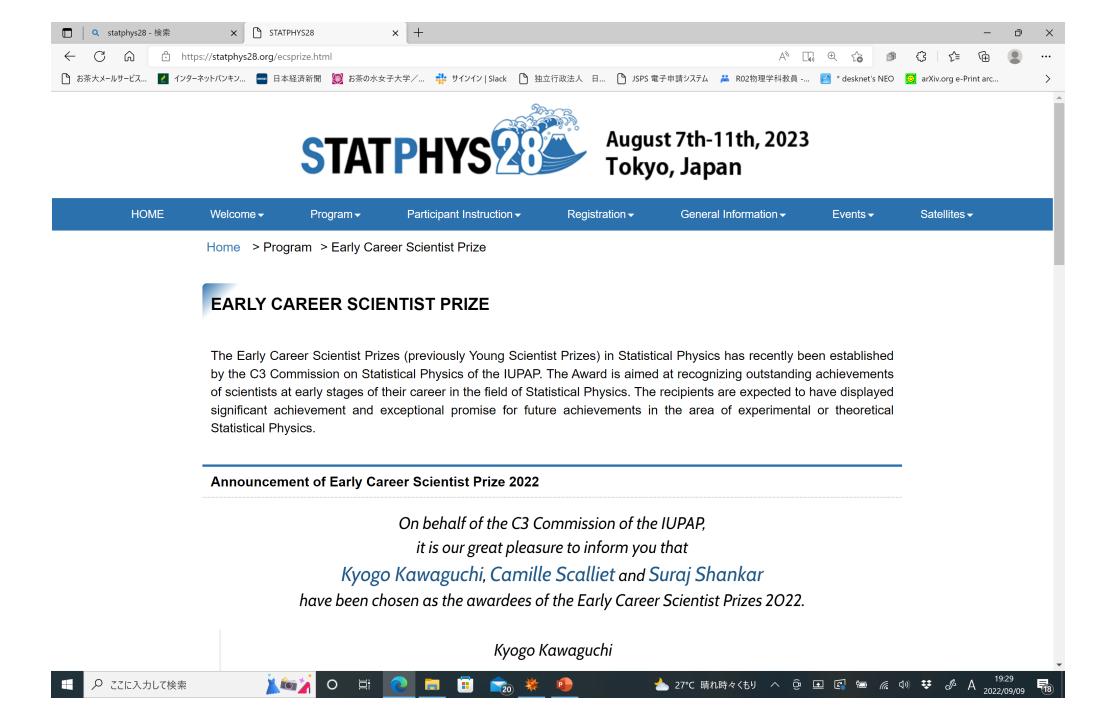
Ram Ramaswamy (New Delhi)

Date: August 1-4, 2023

Venue: Indian Institute of Technology Madras, Chennai, India

Contact: Neelima M Gupte (gupte@iitm.ac.in)





### THE BOLTZMANN MEDAL

The Boltzmann Award was instituted by the Commission on Statistical Physics (C3) of the IUPAP to honor outstanding achievements in Statistical Physics. It is presented by the Commission at the STATPHYS meeting. The award consists of a glided medal (the Boltzmann Medal) with the inscription of Ludwig Boltzmann.

### **Announcement of Boltzmann Medals 2022**

On behalf of the C3 Commission of the IUPAP,
it is our great pleasure to inform you that

Deepak Dhar and John J. Hopfield
have been chosen as the awardees of the Boltzmann Medals 2022.

### Deepak Dhar

For his seminal contributions to several areas of statistical physics, including exact solutions of self-organized criticality models, interfacial growth, universal long-time relaxation in disordered magnetic systems, exact solutions in percolation and cluster counting problems and definition of the spectral dimension of fractals.

### John J. Hopfield

For extending the boundaries of statistical physics to encompass the phenomena of life, from kinetic proofreading in the transmission of information at the molecular level to the dynamics of neural networks creating a new language for thinking about computation in the brain.

The Boltzmann Awards of the C3 Commission on Statistical Physics of the International Union of Pure and Applied Physics (IUPAP) will be presented at Statphys28, to be held in Tokyo (Japan), 7th to 11th August 2023.

## 第28回 IUPAP統計物理学国際会議組織委員会 発足: 2019年1月7日

**目的**: 伝統的な統計物理の世界大会を開催し最新成果を広く伝達 日本の基礎研究の高さを国内外に喧伝し、存在感を向上 専門分野間の交流の場を提供し、統計物理の発展に貢献

• 現地組織委員会 (全17名) Local Organizing Committee

田崎晴明(学習院大)、佐々真一(京大理)、早川尚男(京大基研) 竹内一将(東大理)、沙川貴大(東大工)、笹本智弘(東工大) 前多裕介(九大理)、福島孝治(東大総合文化)、押川正毅(東大物性研) 緒方芳子(東大数理)、工藤和恵(お茶大理)、出口哲生(お茶大理)、 佐野雅己(上海交通大)、高安秀樹(ソニーCSL)、松本剛(京大理)、 宮崎州正(名大理)、川島直輝(東大物性研)

· 第28回IUPAP統計物理学国際会議組織委員会

IUPAP C3委員会(母体団体)と現地組織委員会(LOC)から構成される。

- 現地組織委員会と学術研究団体との関係:
- IUPAPのC3委員会を母体とする。
- 一般社団法人日本物理学会との共催で、運営の統括を担う。

# 最後に

・多くの国々の研究者が交流する場をつくり、科学分野の一体感形成を 図ります。さらに、世界へ日本の存在を印象付けることが目的です。

• 日本の若手・ベテランの研究を海外へ発信したいと思います。

幸い、発表申込件数は過去最多の可能性が高いです。

皆様、ぜひ参加して下さい。今後ともご支援をお願いします。

SCCES シリーズ (播磨尚朝、神戸大院理): 2023年3月23日(木)拡大物性委員会

# SCES(強相関電子系国際会議) 今後の予定

播磨尚朝(神戸大)

2023年 SCES2023 7月3日~7日 仁川(韓国)

Chair: Je-Geun Park

2024年 ICM 6月30日~7月5日 ボローニャ(イタリア)

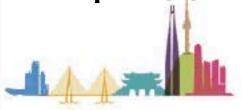
2025年 SCES2025

2026年 SCES2026

SCCES シリーズ (播磨尚朝、神戸大院理) : 2023年3月23日(木) 拡大物性委員会

https://www.sces2023.org

July 2-7, 2023 | Inchon Korea



**SCES 2023** 

July 2-7, 2023 | Songdo ConvensiA, Incheon, Korea













## **Conference Chair**



Je-Geun Park Seoul National University

Quick Search for SCES 2023?

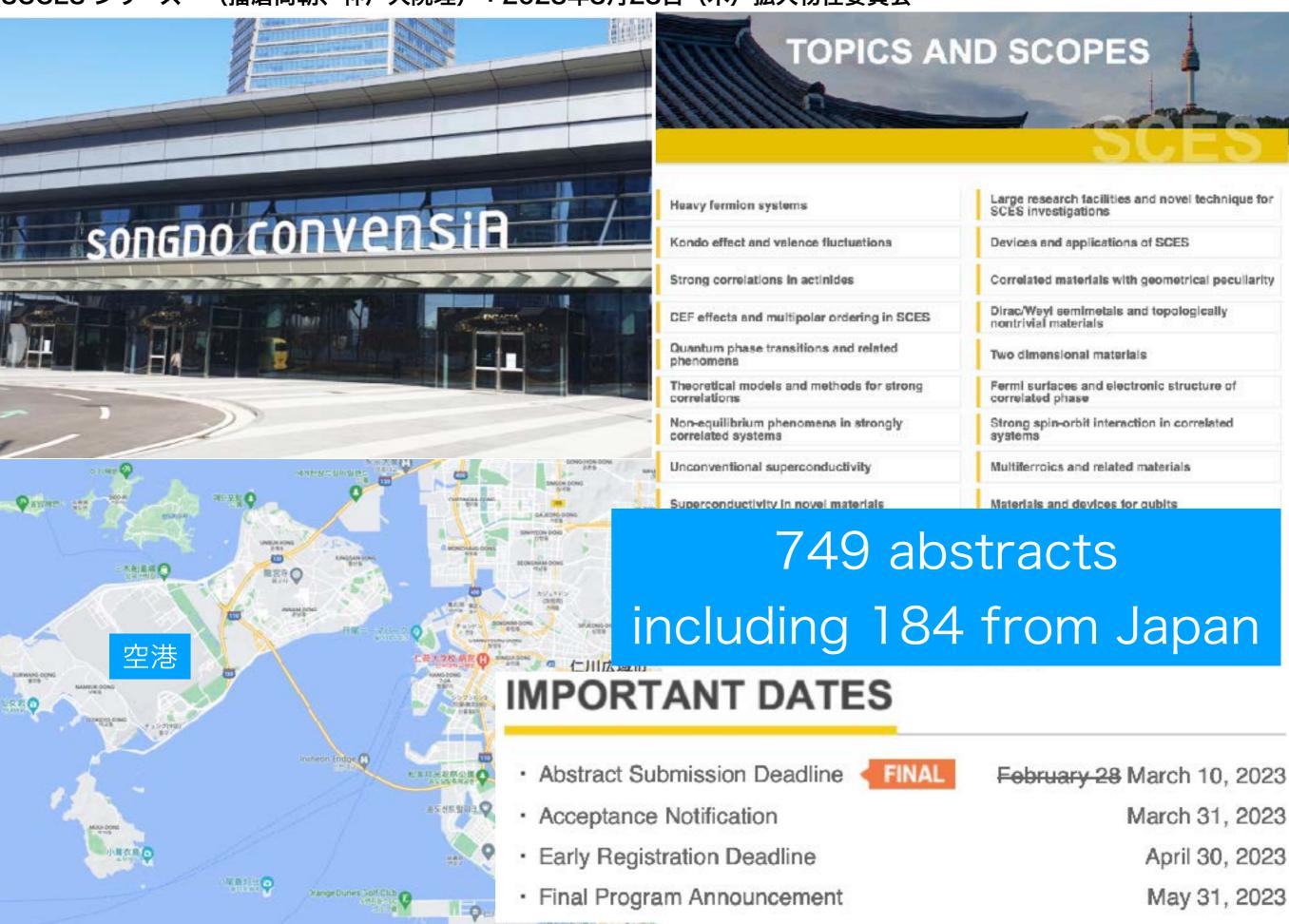
- Download Center
- Topics and Scopes
- Abstract Submission



Who's Coming to **SCES 2023?** 

MORE

SCCES シリーズ (播磨尚朝、神戸大院理): 2023年3月23日(木) 拡大物性委員会



SCCES シリーズ (播磨尚朝、神戸大院理): 2023年3月23日(木)拡大物性委員会

# SPECIAL SESSIONS

### Public Lecture (Tentative) Quantum computer and quantum materials: present and future by IBM

The recent development of the quantum computer is breathtaking and surpassed everyone's expectations. With that progress, it is time to think about using them in materials science. This special public lecture will offer an ideal platform and opportunity to hear from one of the leading engineers at IBM about the long-term vision and dream.

\*Speaker list will be updated.

### Special Session I 30 years of SCES and Kondo physics

Organizer S. Julian, E. Bauer and H. Harima

The International Conference on Strongly Correlated Electron Systems (SCES) is one of the major international events and the most important one for strongly correlated electron systems. The field has expanded enormously since its first meeting in 1992 in Sendai, Japan. It now covers wide-ranging subjects: heavy fermion, oxide physics, quantum magnetism, topological physics, spin-orbit physics, spintronics, and 2d materials, to name only a few. SCES2023 will be an ideal place and time to celebrate the 30 years of success the SCES community has enjoyed since 1992. At the special session, we also plan to remember the scientific contribution made by the late Prof. J. Kondo.

Speaker 1 Takashi Yanagisawa (National Institute of Advanced Industrial Science and Technology, Japan)

Speaker 2 Frank Steglich (Max-Planck-Institute for Chemical Physics of Solids, Germany)

Speaker 3 Joe D. Thompson (Los Alamos National Labotatory, USA)

Speaker 4 Getrud Zwicknagl (Technische Universität Braunschweig, Germany)

Speaker 5 Yoshichika Onuki (Tokyo Metropolitan University, Japan)

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### Special Session II Quantum materials: the future direction

Organizer A. de Visser, V. Madhavan, and A. Damascelli

The physics of strongly correlated electron systems (SCES) has provided the standard framework of the past five decades of condensed matter physics. But with the advent of quantum science and technology, it is going through another revolution: the future is exciting but hard to predict. It offers a new challenge to the condensed matter physicist community, and 'Quantum Material' is a kind of our collective response. The SCES audience will benefit from hearing about this new direction from some leading figures.

Speaker 1 Allan MacDonald (University of Texas Austin, USA)

Speaker 2 Paul Canfield (Iowa State University, USA)

Speaker 3 Roser Valenti (Goethe University Frankfurt, Germany)

SCCES シリーズ (播磨尚朝、神戸大院理): 2023年3月23日(木)拡大物性委員会

# https://www.icm2024.org/

Bologna, Italy, June 30 – July 5, 2024



SCES symposium

**Session chairs:** 

Prof. Dr. Manuel Brando MPI Dresden

Prof. Dr. Philipp Gegenwart Augsburg University

SCCES シリーズ (播磨尚朝、神戸大院理): 2023年3月23日(木) 拡大物性委員会

# SCES(強相関電子系国際会議) 今後の予定

播磨尚朝(神戸大)

2023年 SCES2023 7月3日~7日 仁川(韓国)

Chair: Je-Geun Park

2024年 ICM 6月30日~7月5日 ボローニャ(イタリア)

2025年 SCES2025 北アメリカーモントリオール???

2026年 SCES2026 日本????

## Division of Condensed Matter Physics

**Members** 

Japan China Korea India Taiwan Australia



#### **Announcement**

AAPPS

< ⊙ → >

2023 APCTP Spring Colloquium, March ~ June

Member Societies' News 2023-02-23

Leaders of Independent Junior Research Group (JRG) 2023

ABOUT AAPPS ANNOUNCEMENT ACTIVITIES DIVISIONS

Job Opportunities 2023-01-04

[IFM] National Physics Conference 2022

Member Societies' News 2022-10-07

AAPPS Bulletin LOGIN =

### **Divisions & Activities**













### Mission of 2023-2024 term

In order to put the DCMP on the track of stable and developing operation, we will strive to increase the number of members, hold annual meetings, and promote international exchange through co-sponsored symposiums and sessions at annual meetings of each association. In order to widely inform the activities of the division we will promote public relations activities and strive to improve our website and newsletters. Toward APPC16, we clarify the roles of DCMP in APPC and the relationship with AC2MP, and contribute to the development of AAPPS activities. We also promote academic exchanges with regional condensed matter physics organization in Europe and America increase the visibility of condensed matter physics activities in Asia-Pacific area.

- 1) Membership expansion, more than 1000 in 2023
- 2) AC2MP2023, 2024
- 3) Newsletter, transfer to AAPPS bulletin
- 4) Co-organization of symposium/session in annual meeting of each associations
- 5) E-mail announcement circulation system
- 6) Preparation of APPC16(2025)

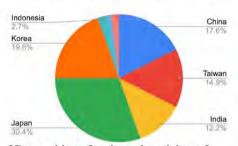
The Asia-Pacific Conference on Condensed Matter Physics 2022 was held from 21<sup>st</sup> Nov. to 23<sup>rd</sup>. Nov. 2022 in Sendai, Japan in hybrid format

Travel		
	IMR	APCTP
Invited(Onsite)	549,013	772,602
Speaker(Onsite)	1,166,060	183,740
Others(Onsitw, TBD)		
Invited(Online)		0
Others(Onsite)		
Total	1,715,073	956,342
Others	100,000	

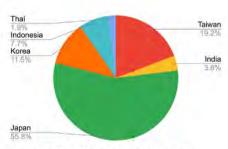
#### Meeting/conference reports

The Asia-Pacific Conference on Condensed Matter Physics 2022 was held from 21<sup>st</sup> Nov. to 23<sup>rd</sup>. Nov. 2022 in Sendai, Japan in hybrid format. This is the 2<sup>nd</sup> annual meeting of the DCMP. This year, we had APPC15 in summer and so the meeting was focused on three main topics, applications of extreme conditions for condensed matter physics, quantum beam applications in condensed matter physics, topology related phenomena in matters.

The total number of registered participants was 148 and that of the onsite attendants was 52. The 56% of the onsite attendants were from Japan and 19 % were from Taiwan. There were 8 % of attendants from Indonesia.



[Composition of registered participants]



[Composition of onsite participants]

the Physical Society of Japan. It was very





memorable to have two presidents of the physical associations, from Japan and from Taiwan, which are responsible for the current and the future AC2MP meetings.

	Invited	Contributed	Poster
China	6	4	0
Taiwan	6	4	0
India	3	0	0
Japan	4	14	10
Korea	7	3	1
Indonesia	0	2	3
Thai	0	1	0
Others	0	1	0
	26	29	14

# Welcome to AC2MP2023 Asia-Pacific Conference on Condensed Matter Physics 2023

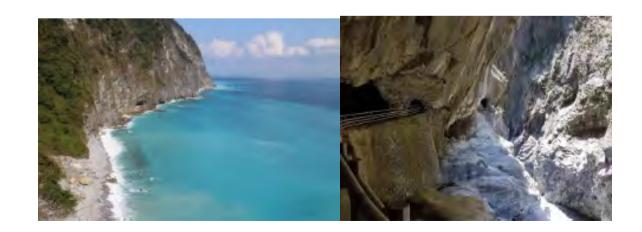
Date, Nov.27-29 National Dong Hwa University, Taiwan

AC2MP is an annual scientific meeting of division of condensed matter physics of AAPPS started in 2021.



Meet researchers in the Asia-Pacific region you don't know yet. You can see the outstanding researches from this rapidly developing area. Best opportunities to create international exchanges and collaborations.

Facing the ocean and leaning on the mountains, Hualien County is one of the most scenic areas in Taiwan. Located on the east coast of Taiwan, Hualien is bordered by the Pacific Ocean, which makes it the best place to enjoy the sea view. The Central Mountain Range is also close to Hualien. Mountainous landscapes such as Taroko Gorges can be found here.



### Joint symposium/session

Organize symposium/session in annual meeting of each associations.

### 1. Endorsement type

- 1)Organizer of an association determine the subject of session and make a list of speakers including the speakers other than the associations
- 2)Ask endorsement for DCMP
- 3)If there is no problem, it can be endorsed.

### 2. Nomination by Session Subject

- 1)Organizer of an association determine the subject of session
- 2) Ask speaker nomination for DCMP program committee
- 3)Decision of speakers by organizer
- 4) Ask DCMP for co-organization
- 5)If there is no problem, it can be approved

### 3. Open call

Similar to 2, but organizer also ask topics for DCMP program committee

Merit for DCMP and for associations

Globalization of annual meeting

Activation of exchanges, speakers from other associations, especially for small associations.

## **Event Calendar**

Date	Date Event Location		URL
2023, Jan. 16-18	Annual meeting of CPST	National Cheng Kung University, Tainan, Taiwan	https://www.conf.tw/sit e/page.aspx?pid=901 &sid=1463⟨=en
2023 Feb. 07-10	The 45th Annual Condensed Matter and Materials Meeting, Wagga Wagga Wagga 2023  Charles Sturt University, Wagga Wagga		https://www.aip.org.au /event-4889836
2023 Mar. 22-25	Physical Society of Japan, Spring meeting	Online	https://www.jps.or.jp/e nglish/meetings-and- awards/spring/spring- meeting.html
2023 Apr. 9-21	KPS spring meeting	spring meeting Daejeon Convention Center	
2023 Jul. 02-07	International Conference on Strongly Correlated Electron Systems 2023 (SCES 2023)	Incheon, Korea	https://www.sces2023. org
2023 Sep. 16-19	Physical Society of Japan, General meeting	Onsite and Hybrid(in part)	TBA
2023 Oct. 25-27	KPS fall meeting	Changwon Exhibition Convention Center	https://www.kps.or.kr/c ontent/conference/me eting_future.php
2023 Nov. 27-29	AC2MP2023	Hualien, Taiwan	TBA
2023 Dec.	AIP Summer meeting	TBD	TBD