

Theoretical and Applied Mechanics

Organizing

Committee on Mechanical Engineering, Committee on General Engineering, Committee on Civil Engineering and Architecture, Science Council of Japan Joint Subcommittee on Theoretical and Applied Mechanics

Co-organizing

Consortium for Theoretical and Applied Mechanics, Japan Society of Engineers

Date

13:00 – 16:30, 6th of March (Fri), 2025

Venue

Auditorium, Science Council of Japan and Online

Free
of
charge

Classical mechanics is often regarded as a fundamental discipline established in each field of study, such as the so-called four dynamics in mechanical engineering (mechanics, mechanics of materials, fluid mechanics and thermodynamics). However, as the problems covered by mechanics become increasingly diverse, unsolved problems in mechanics across various disciplines are becoming apparent. In order to tackle these problems, it is necessary to fuse a wide range of disciplines beyond the framework of existing fundamental disciplines. Against the background of the above, this symposium, the eleventh of its kind, has been held to look at the latest trends in advanced research that could broaden the base of classical mechanics research, and at the same time to look at and discuss next-generation mechanics research that should be newly developed by researchers based on classical mechanics in collaboration with different disciplines. Last year, we planned a symposium with an emphasis on diversity and inclusion, with foreign researchers active in Japan playing a central role in selecting the symposium speakers, and all lectures being given in English. This year, following last year, we planned this symposium together with foreign researchers active in Japan, related to the theme selected for the International Union of Theoretical and Applied Mechanics (IUTAM) symposium.

Part 1 Chair: Timothée Mouterde (Lecturer, The University Tokyo)

13:00 Opening Remarks

13:10 Invited Lecture (1) 「The role of solid mechanics in solid-state ionic device research: an example」
Wakako Araki (Professor, Institute of Science Tokyo)

13:40 Invited Lecture (2) 「Curvami: an open-source software for curved origami」
Ettore Barbieri (Senior Researcher, Japan Agency for Marine-Earth Science and Technology)

14:10 Invited Lecture (3) 「On the analytical solution of a coupled multiphysics model for ionic polymer-metal composite (IPMC) sensors」 On-line
Kentaro Takagi (Professor, Toyohashi University of Technology)

14:40 Break

Part 2 Chair: Ettore Barbieri (Senior Researcher, Japan Agency for Marine-Earth Science and Technology)

14:50 Invited Lecture (4) 「Mechanical characteristics of gas–liquid two-phase flow in a venturi tube and Its potential for societal applications」
Akiko Kaneko (Professor, Tsukuba University)

15:20 Invited Lecture (5) 「An electrifying farewell: how evaporating drops dance and explode」
Dan Daniel (Associate Professor, Okinawa Institute of Science and Technology Graduate University (OIST))

15:50 Invited Lecture (6) 「Control of capsule migration using pulsatile flow: a numerical analysis of a fluid-membrane interaction problem」
Naoki Takeishi (Associate Professor, Kyushu University)

16:20 Closing Remarks

16:30 Closing

Registration

If you wish to participate, please register in advance by
12:00 on March 4th (Wed) at the URL below or by using the code
on the right. Pre-registration will be closed as soon as capacity is reached.
<https://forms.gle/xc4h8HPxETbKR1j9A>

Contact: Yoko Yamanishi (Professor, Kyushu Univ.) e-mail: yoko * mech.kyushu-u.ac.jp (Please change * to @ when you send it.)



主催 日本学術会議機械工学委員会・総合工学委員会・土木工学・建築学委員会合同理論応用力学分科会
共催 公益社団法人日本工学会理論応用力学コンソーシアム



日時

令和8年3月6日(金) 13:00 - 16:30

場所

日本学術会議講堂(東京都港区六本木7-22-34)ハイブリッド開催

参加料

無料

古典力学は、機械工学におけるいわゆる4力学(機械力学・材料力学・流体力学・熱力学)のように、学問分野ごとに確立された基盤学問のように捉えられがちである。しかし、力学が対象とする問題の多様化に伴い、様々な学問分野にまたがる未解決の力学の問題が顕在化してきている。これらの諸課題に取り組むためには、既存の基盤学問領域の枠にとらわれない広範囲な学問分野との融合が必要である。本シンポジウムは今回が11回目となるが、上記を背景に、古典力学研究の裾野を広げうる先端的研究に関する最新動向を俯瞰すると同時に、古典力学を基盤とする研究者が異分野と協働して新たに開拓すべき次世代力学研究を展望・討論を重ねてきた。その中で、昨年度は日本で活躍する外国人研究者が中心となりシンポジウム講演者の選定を行い、すべての講演を英語で行うなど、ダイバーシティ&インクルージョンを重視したシンポジウムを企画した。本年度は、国際理論応用力学連合(IUTAM)のシンポジウムに採択されたテーマに関連し、昨年度に続き、日本で活躍する外国人研究者とともに本シンポジウムを企画した。

Part 1 司会:Timothée Mouterde(東京大学・講師)

13:00 開会の挨拶

13:10 招待講演(1)「The role of solid mechanics in solid-state ionic device research: an example」
荒木 稚子(東京科学大学・教授)

13:40 招待講演(2)「Curvami: an open-source software for curved origami」

Ettore Barbieri(国立大学開発法人海洋研究開発機構付加価値情報創成部門・主任)

14:10 招待講演(3)「On the analytical solution of a coupled multiphysics model for ionic polymer-metal composite (IPMC) sensors」オンライン
高木 賢太郎(豊橋技術科学大学・教授)

14:40 休憩

Part 2 司会:Ettore Barbieri(国立大学開発法人海洋研究開発機構・主任)

14:50 招待講演(4)「Mechanical characteristics of gas–liquid two-phase flow in a venturi tube and Its potential for societal applications」
金子 晓子(筑波大学・教授)

15:20 招待講演(5)「An electrifying farewell: how evaporating drops dance and explode」
Dan Daniel(沖縄科学技術大学院大学(OIST)・准教授)

15:50 招待講演(6)「Control of capsule migration using pulsatile flow: a numerical analysis of a fluid-membrane interaction problem」
武石 直樹(九州大学・准教授)

16:20 閉会の挨拶

16:30 閉会

参加申込み方法

参加を希望される方は、**3/4(水)12:00**までに下記URLまたは右のコードより事前申込をお願いします。定員になり次第、事前申込みの受付は終了します。
<https://forms.gle/xc4h8HPxETbKR1j9A>



連絡先:山西陽子(九州大学) e-mail:yoko * mech.Kyushu-u.ac.jp(送信の際には*を@に変えてください)