
Fifth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and the Physical Society of Japan

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CODE OF CONDUCT FOR APS MEETINGS

It is the policy of the American Physical Society (APS) that all participants, including attendees, vendors, APS staff, volunteers, and all other stakeholders at APS meetings will conduct themselves in a professional manner that is welcoming to all participants and free from any form of discrimination, harassment, or retaliation. Participants will treat each other with respect and consideration to create a collegial, inclusive, and professional environment at APS Meetings. Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants.

Participants will avoid any inappropriate actions or statements based on individual characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, or any other characteristic protected by law. Disruptive or harassing behavior of any kind will not be tolerated. Harassment includes but is not limited to inappropriate or intimidating behavior and language, unwelcome jokes or comments, unwanted touching or attention, offensive images, photography without permission, and stalking.

Violations of this code of conduct policy should be reported to meeting organizers, APS staff, or the APS Director of Meetings. Sanctions may range from verbal warning, to ejection from the meeting without refund, to notifying appropriate authorities. Retaliation for complaints of inappropriate conduct will not be tolerated. If a participant observes inappropriate comments or actions and personal intervention seems appropriate and safe, they should be considerate of all parties before intervening.

Fifth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and the Physical Society of Japan

October 23-27, 2018

Hilton Waikoloa Village, Big Island, Hawaii

GENERAL INFORMATION

The Fall Meeting will reprise the highly successful first four joint meetings of the Division of Nuclear Physics (DNP) of the American Physical Society (APS) and the experimental and theoretical nuclear divisions of the Physical Society of Japan (JPS). The previous bilateral meetings in 2001, 2005, 2009, and 2014 were a resounding success, drawing between 800 and 1200 participants from Japan and North America. This year's meeting will be held once again at the Hilton Waikoloa Village on the Big Island of Hawaii on the dates of 23-27 October 2018.

It is our intent that Hawaii 2018 (HAW18) will serve as a meeting ground to foster cooperation, collaboration, and the exchange of ideas among nuclear scientists from Japan, the U.S., and other Pacific Rim countries. Moreover, the meeting will provide an unusual opportunity for students from Japan and the U.S. to meet, interact, and discuss their visions of careers in nuclear physics. Finally, it is our hope that Hawaii 2018 will be every bit as successful as Hawaii 2014, Hawaii 2009, Hawaii 2005, which occurred during the 2005 World Year of Physics, and the initial Hawaii 2001.

All conference functions and sessions will be held in the Hilton Waikoloa Village, located on the Kohala Coast of the Big Island of Hawaii, a 20-minute drive north of Kona. The elegant Hilton Waikoloa Village sits on 62 ocean-front acres offering amenities suited to any taste. These include award-winning dining (including European and Asian restaurants), world-class shopping, and an array of activities ranging from golf and tennis to an interactive dolphin program in the Village's private lagoon. The hotel offers multilingual guest relations staff, a multiple pool system, snorkel-

ing in the resort lagoon, Hawaiian cultural programs, an extensive Asian art collection, and more.

The Waikoloa Village is located about 30 km north from the Kona International Airport. There are non-stop flights to Kona from the U.S. mainland and from Japan. Shuttle service to the hotel from the airport is available by SpeediShuttle (www.speedishuttle.com), and the airport is serviced by the major rental car companies. National Car Rental has a branch at the hotel.

The 5th Joint Meeting is the third in the series to occur on Hawaii's biggest island. The Island of Hawaii is the largest island in the Hawaiian chain, with an area twice that of all the other Hawaiian Islands combined, and is consequently known as "The Big Island." It is as diverse as it is large, with astonishingly unique natural wonders including active volcanoes, rain forests, colorful beaches and coffee plantations. The Big Island is home to 1,660 species of flowering plants and 45 species of birds found nowhere else on the planet. The nearby summit of Mauna Kea, home to the Keck and Subaru telescopes (among others), offers astronomers some of the best viewing conditions on Earth. Waikoloa is 160 km by air from the active volcano, so that the eruption has little effect in Waikoloa.

HAW18 will be a five-day meeting. Workshops will be held on 23 October (Tuesday), preceding the plenary session and traditional scientific sessions scheduled for 24-27 October. The Workshops will be followed that evening by a welcome reception on the Lagoon Lanai.

The plenary session on Wednesday morning will open the main meeting and will highlight the nuclear physics of Japan and the U.S. Parallel scientific sessions

will be held during the evening on Wednesday and morning and evening on Thursday. On Friday there will be morning sessions followed during the noon hour by a DNP Awards Session and in the afternoon by an undergraduate poster session and then DNP and JPS Town Meetings, capped off in the evening by a luau. Tickets for the luau can be purchased on-site at the Hawaii 2018 registration desk. On the last day of the meeting, Saturday, 27 October, sessions are scheduled for the morning and afternoon to benefit those with a Saturday evening or early Sunday flight.

As was the case for previous Hawaii Joint Meetings, a typical scientific session will see a single invited speaker session running in parallel with multiple mini-symposia and contributed paper sessions. Mini-symposia involve one lead (invited) talk followed by contributed papers all on the same topic. The mini-symposia are viewed as ideal sessions to integrate the JPS and DNP communities around topics of mutual interest. All talk slots are multiples of 15 minutes: contributed papers will consist of a 12 minute talk plus 3 minutes for questions and discussion; lead talks in mini-symposia will be 25 minutes plus 5 minutes for questions and discussion; talks in invited sessions will be 35 minutes plus 10 minutes for questions and discussion. In keeping with the international character of the meeting, all presenters are urged to speak slowly and clearly and to include important points in the images projected on the screen. An LCD projector will be provided along with a pointer, but speakers should come prepared to use their own computer.

PLENARY SESSION

The formal meeting activities begin with a plenary session on Wednesday morning, 24 October. Distinguished speakers for the U.S. and Japan will share their vision for important nuclear physics in the present and the future. The plenary speakers are John Wilkerson (University of North Carolina) "Solving the riddle and mystery of the enigmatic neutrino", Satoshi Nakamura (Tohoku University) "Topics on (e,e') spectroscopy of Lambda hypernuclei at JLab", Takashi Nakamura (Tokyo Institute of Technology) "Exploring towards the nuclear limit: neutron drip line and beyond", Daniel Kasen (University of California, Berkeley) "Supernovae and neutron star merger". The plenary session will be held in the Monarchy Ballroom starting at 08:45.

SPECIAL FUNCTIONS

Tuesday Evening

WELCOME RECEPTION

A welcome reception following the workshops on Tuesday, 23 October, will be held on the Lagoon Lanai starting at 19:00. This is a wonderful opportunity to meet and interact with colleagues. Light refreshments will be served. The reception is open to all registered meeting participants and registered companions. The Registration desk will be open during the evening from 17:00 until 20:00.

Wednesday Morning

COMPANIONS GET-TOGETHER

A Companions Get-Together with refreshments will be held on the Lagoon Lanai at 9:30 in parallel with the Plenary Session. A speaker will outline the various activities that are available at the Hilton Waikoloa Village.

Wednesday Afternoon

JPS FORUM OF NUCLEAR ASTROPHYSICS (UKAKUREN)

There will be a discussion in Japanese on the topic of Nuclear Astrophysics starting at 14:00 in Kona 1.

MEETING OF THE J-PARC HADRON USERS ASSOCIATION

There will be a discussion in English involving JPS and APS members starting at 15:00 in Kona 1. All participants are welcome.

DNP/JPS PROGRAM ON WOMEN IN PHYSICS

The Division of Nuclear Physics and the Physical Society of Japan will host a ticket-required meal function at 17:00 in Kona 2 & 3. Featured speakers will be Atsuko Odahara (Osaka University) and Sherry Yennello (Texas A&M University).

Thursday Afternoon

USER GROUP MEETINGS

Time for User Group meetings has been set aside on Thursday afternoon. Contact the appropriate User Group for time and location.

CEU UNDERGRADUATE GET-TOGETHER

The undergraduate student reception, organized by the Conference Experience for Undergraduates director Shelly Lesher and the JPS undergraduate coordinator Nori Aoi, will be held at 18:00 in Kona 4.

GRADUATE STUDENT GET-TOGETHER

The graduate student reception for all graduate students, hosted by the DNP and JPS, will be held at 18:00 in Queens 6. All graduate students are invited to meet their fellow students. Tickets are \$5 with Early Registration.

*Friday Afternoon***GRADUATE SCHOOL INFORMATION SESSION**

Graduate school representatives will have an opportunity to converse with CEU undergraduate students and provide information to them regarding opportunities for graduate school and research at their institutions in the Monarchy Ballroom between 12:30 and 14:00. **CEU POSTER SESSION**

A CEU student poster session has been organized by Shelly Lesher and Nori Aoi starting at 14:00 as part of the Conference Experience for Undergraduates. The posters will be exhibited in the Grand Promenade.

PHYSICAL REVIEW MEET-THE EDITORS FUNCTION

A drop-in function will be hosted by the *Physical Review* Journals publishing nuclear physics on the Lagoon Lanai and Grand Promenade between 14:00 and 15:45. The Editors cordially invite Hawaii 2018 participants to join them for conversation and refreshments in the area adjacent to the CEU poster session. Comments, questions, suggestions, compliments, and complaints regarding journal issues are welcome.

DNP TOWN MEETING

A DNP Business/Town Meeting will be held in the Monarchy Ballroom at 16:00. The Stuart Jay Freedman Award, the DNP Mentoring Award, and the Nuclear Physics Dissertation Award will be presented. Reports from the Agencies and NSAC will be heard.

JPS NUCLEAR PHYSICS GROUP MEETINGS

JPS Nuclear Physics Committee Meetings (experimentalists and theorists), Nuclear Physics Group Meetings, will be held in Kona 4 & 5 at 16:00 and 16:30. These will be followed by a joint meeting of all experimentalists and theorists in Kona 4 at 17:00.

*Friday Evening***LUAU**

The conference dinner will be in the form of a traditional Hawaiian Luau with Hawaiian food, drinks, and entertainment. The cost (advance purchase) to attend the luau is \$115.00 for those 13 years and up, \$57.50 for children 5 years old to 12 years old, and children under 5 are free. (On-site tickets will cost an additional \$15 and \$7.50, respectively.) The luau will begin at 18:30. The location will be the Ocean View Terrace, which is adjacent to Buddha Point. The entrance to the luau will be from the Kohala Pool Bar and restroom area near the seaside end of the Ocean Tower complex.

REGISTRATION

Registration will take place in the Hilton Waikoloa Village convention space area known as the Grand Promenade — which is served by the hotel train, boats, and museum walk. Registration will begin on Monday afternoon and continue through Saturday. The registration desk will be open during most of the meeting for registration, meeting information, and other assistance. Both Japanese and English language staff will be available to assist with the registration desk functions. After the early registration deadline of 12 September, the on-line late registration fee is \$375 for APS and JPS members and \$175 for students. Following the closing of on-line registration, any registration must be made on site. On site registration fees are \$450 for APS and JPS members and \$250 for students. The on-site non-member registration fee is \$900.

On-site registration hours will be:

MONDAY	17:00 TO 20:00
TUESDAY	8:00 TO 13:00; 17:00 TO 20:00
WEDNESDAY	8:00 TO 13:00; 18:00 TO 21:00
THURSDAY	8:30 TO 13:00; 18:00 TO 21:00
FRIDAY	8:30 TO 11:00; 14:00 TO 16:00
SATURDAY	8:30 TO 11:00; 13:00 TO 15:00

CONFERENCE EXPERIENCE FOR UNDERGRADUATES (CEU)

Shelly Leshner (University of Wisconsin La Crosse) has organized the 21st annual CEU program specifically tailored to the nuclear physics undergraduates participating in Hawaii 2018. The goal of the CEU is to provide a “capstone” conference experience for undergraduate students who have conducted research in nuclear science, by providing them the opportunity to present their research to the larger professional community and to one another. Additionally, it enables the students to converse with faculty and senior scientists from graduate institutions about graduate school opportunities.

The CEU orientation session is set for 15:00 on Wednesday. Special CEU nuclear physics lectures will be held at 16:00 on Wednesday by Reina Maruyama (Yale University) and at 9:00 on Friday by Brad Sherrill (Michigan State University), all in the Monarchy Ballroom. A tutorial about applying to graduate school by Jolie Cizewski (Rutgers University) will occur at 9:00 on Thursday before the graduate school information session, which begins at 12:30 in the Monarchy Ballroom. All Conference attendees are encouraged to find time to visit the CEU research poster session that will be held on Friday afternoon at 14:00 in the Grand Promenade.

The CEU 2018 program thanks the following organizations for support: the Division of Nuclear Physics of the American Physical Society, the Physical Society of Japan, the National Science Foundation, and the Department of Energy through the following Laboratories: Argonne National Laboratory, Brookhaven National Laboratory, Lawrence Berkeley National Laboratory, Los Alamos National Laboratory, National Superconducting Cyclotron Laboratory, Oak Ridge National Laboratory, and Thomas Jefferson National Accelerator Facility, and the following Japanese organizations: Nuclear Physics Forum of Japan, the Nuclear Theory Group of Japan, and Yukawa Institute for Theoretical Physics.

EXHIBITORS

The DNP and JPS wish to thank those members of the industrial community who have contributed financially to the success of Hawaii 2018. In particular, the following exhibitors are recognized: WIENER Plein & Baus Corp., CAEN, and NALU Scientific

Attendees at Hawaii 2018 are encouraged to stop by the displays and take advantage of the opportunity to explore what each company has to offer.

PROGRAM ACKNOWLEDGEMENTS

The program (invited sessions and mini-symposia) for Hawaii 2018 was organized by the DNP/JPS Program Committee under the chairmanship of Robert V. F. Janssens. The workshops were coordinated by Tomohiro Uesaka and David J. Dean of the Organizing Committee. The Organizers thank Eric Barth and Donna Greene for their assistance in the preparation of all aspects of the BAPS program. The organizers also thank those who served as sorters to arrange the more than 800 abstracts into sessions: Robert Janssens, Tomofumi Nagae, Ben Gibson, Tomohiro Uesaka, Christine Aidala, Nadia Fomin, Greg Hackman, Or Hen, Ken Hicks, Christine Nattrass, Andrew Rogers, Alfredo Galindo-Uribarri, Christopher Wrede, Kouichi Hagino, Shoichi Sasaki, Kimiko Sekiguchi, Hiroyuki Noumi.

WORKSHOPS

The meeting will open with 10 workshops on Tuesday morning followed by 10 workshops on Tuesday afternoon. The topics and organizers of the parallel workshop sessions are:

- 1WAA/AB:** Computational Nuclear Structure (Utsuno, Nazarewicz)
- 1WBA/BB:** Physics and Chemistry of the Heaviest Elements and Nuclei (Sakai, Rykaczewski, Dean)
- 1WCA/CB:** Nuclear Fission Turns 80 (Nishio, Haigino, Vogt, Velkovska)
- 1WDA/DB:** Fundamental Physics at Low Energy (I) (Mibe, Sakemi, Shimizu, El-Khadra, Hertzog, Mueller, Snow)
- 1WEA/EB:** Proton Charge Radius Puzzle (Suda, Gasparian)
- 1WFA/FB:** Time-projection Chambers for Radioactive Isotope Beams (Suzuki, Bazin, Mittag)
- 1WHA/HB:** Hadron Structure (I) (Goto, Reidl, Vossen, Melnitchouk)
- 1WJA/JB:** Future Prospects of Neutrinoless Double Beta Decay (Kishimoto, Poon)
- 1WKA/KB:** Evolution of Nuclear Properties Towards the Drip Lines: Reaction Studies with Large-acceptance Spectrometers (Nakamura, Zegers)
- 1WLA/LB:** Antiproton Physics: Fundamental Symmetries, Hadron Structure, and the Universe (Matsuda, Fujiwara)
- 2WAA/AB:** Nuclear Equation of State in Context of Neutron Star Merger Event (Isobe, Maruyama, Tsang, Danielewicz)
- 2WBA/BB:** Spectroscopy of Flavored Baryons (Hosaka, Joo)
- 2WCA/CB:** Quenching of Spectroscopic Factors: Open Questions and Future Perspectives (Wimmer, Crawford)
- 2WDA/DB:** Fundamental Physics at Low Energy (II) (Mibe, Sakemi, Shimizu, El-Khadra, Hertzog, Mueller, Snow)
- 2WEA/EB:** R-process in the Era of Neutron Star Merger Observations (Kajino, Estrade)
- 2WFA/FB:** Hadron Structure (II) (Goto, Reidl, Vossen Melnitchouk)
- 2WHA/HB:** Insights into Hypernuclear Physics from JLab & J-PARC (Hiyama, Gibson)
- 2WJA/JB:** Surrogate Techniques for Neutron-induced Reactions on Radioactive Nuclei for Fundamental and Applied Nuclear Science (Kubono, Cizewski)
- 2WKA/KB:** Gamma-ray Spectroscopy in Japan and North America: Recent Highlights and Future Opportunities (Aoi, Macchiavelli)
- 2WLA/LB:** Probing the Quark-gluon Plasma with Jets and Heavy-flavor Particles (Chujo, Velkovska)

INVITED SESSIONS

Six invited sessions were agreed upon and organized by members of the Program Committee, as indicated below in parentheses:

- CA:** Cold Dense Matter and Neutron Stars (Hen, Iida)
- DA:** Exploring QCD through the Hadron Spectrum (Hicks, Shepherd)
- EA:** Frontiers of Quark-Gluon Plasma Physics (Gunji, Velkovska)
- FA:** Frontiers of Nuclear Theory (Hackman, Utsuno)
- LA:** Recent Advances in Neutrino/Nuclear Physics (Engel, Uesaka)
- MA:** Quantum Computing and Machine Learning for Nuclear Physics (Sasaki, Shanahan)

MINI-SYMPOSIA

Eighteen mini-symposia were organized by a number of DNP and JPS members in combination with members of the Program Committee, as indicated below in parentheses. Several mini-symposia received a sufficient number of contributed abstracts to warrant more than one session.

1. Mini-symposium on properties of rp process nuclei (Kay, Rogers, Uesaka, Wrede)
2. Mini-symposium on the Structural diversity of nuclei in the proximity of N=20 and 28 (Kay, Rogers Utsuno)
3. Mini-symposium on from two to three-nucleon correlations in nuclei: recent results and implications (Fomin, Hackman, Hen, Sekiguchi)
4. Mini-symposium on hadron transport models for symmetry energy (Ohnishi, Tsang, Wrede)
5. Mini-symposium on CAGRA (Hackman, Nakano)
6. Mini-symposium on active target techniques for studies with exotic beams (Kay, Rogers, Uesaka)
7. Mini-symposium on proton puzzles (Deshpande, Goto, Iwata, Qiu, Shanahan, Sasaki, Suda)
8. Mini-symposium on collectivity from small to large colliding systems (Gunji, Hirano, Velkovska)
9. Mini-symposium on chirality and vorticity in high energy nuclear collisions (Gunji, Hirano, Velkovska)
10. Mini-symposium on the search for a critical point in the QCD phase diagram (Chujo, Esumi, Velkovska)
11. Mini-symposium on studying Quantum Chromodynamics at an Electron-Ion Collider (Aidala, Roche, Sasaki, Shanahan)
12. Mini-symposium on hadron spectroscopy with electron, photon, and hadron beams (Aidala, Noumi)
13. Mini-symposium on fundamental symmetries (many-body systems) (Behr, Fomin, Ichikawa, Nakano)
14. Mini-symposium on fundamental neutron physics (Broussard, Fomin, Hatanaka, Martin, Snow)
15. Mini-symposium on strangeness nuclear physics today and tomorrow (Gibson, Ohnishi, Tamura)
16. Mini-symposium on intersections of neutrino and charged lepton scattering (Fomin, Roche, Sasaki)
17. Mini-symposium on intersections of neutrino physics and nuclear physics (Galindo-Uribarri, Uesaka)
18. Mini-symposium on photoproduction and electroproduction of hadrons (Hicks, Nakano)

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