

**2nd
Announcement**



OTTAWA • CANADA
icpeac
2023

XXXIII International Conference on Photonic, Electronic and Atomic Collisions

Ottawa, Canada

July 25 - August 1, 2023



icpeac2023.ca

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WELCOME

It is our pleasure to invite you to participate in the XXXIII International Conference on Photonic, Electronic and Atomic Collisions, to be held in Ottawa, Ontario, Canada from July 25 to August 1, 2023.

ICPEAC 2023 is expected to bring together more than 500 scientists from all over the world whose research is concerned with collisions involving photons, electrons, atoms, ions, molecules, clusters, surfaces, exotic particles, and ultracold matter and with attosecond and strong-field atomic and molecular physics and related areas. As you can see further below in this second announcement, an excellent slate of invited speakers has been assembled. The scientific program will be complemented by poster presentations from the whole community including, we hope, one or several contributions from you. On the next few pages, you will learn more about the abstract submission and conference registration processes, our support policies, and much more.

We plan for ICPEAC 2023 to be held in person, and we are excited to host the meeting in Canada's capital, a city with a rich cultural life and many attractions, which will delight you with its welcoming spirit and charm. Ottawa is surrounded by beautiful

nature, and there are plenty of options to experience the great outdoors without going too far. We share a few tips on what to do while you are here further down in this announcement. Whether you follow our suggestions, join one of the offered weekend tours, pursue your own plans or go with the flow, we hope that you will have a chance to enjoy some of the abundant beauty in and around Ottawa to make your trip a rewarding and memorable one beyond the science that brings us all together.

Please take note of the important dates and upcoming deadlines listed on the next page, make your travel arrangements and join us for ICPEAC 2023 in the Shaw Centre, Ottawa's award-winning convention centre, conveniently located in the downtown area.

We look forward to seeing you in Ottawa in July!

Tom Kirchner (Chair of the Local Organizing Committee)

André Staudte (Co-Chair)

François Légaré (Co-Chair)



➤ Scope and Overview

ICPEAC has a long history dating back to 1958 when the first meeting was held in New York City. Since 1961, ICPEAC has been held every two years, has been on five continents, and has grown to attract as many as 800 participants. More information on ICPEAC's history, the ICPEAC charter, and a full list of past and planned future meetings can be found on the [ICPEAC Central Website](#).

The conference brings together the world's leading scientists who are working in the field of collisions involving photons, electrons, ions, atoms, molecules, clusters, surfaces, and exotic particles. They will present their latest research on topics such as ultrafast dynamics at the femto- or attosecond scale, electron- and ion-induced radiation damage of biomolecules, atomic spectroscopy and molecular physics of antimatter, free electron lasers, particle acceleration generated by high-power lasers, ultracold collisions, and fundamental issues of atomic and molecular few-particle dynamics.

The ICPEAC 2023 program will consist of a public lecture, five plenary lectures, four tutorial lectures, more than 60 invited progress reports, a smaller number of special reports selected from the contributed abstracts, and several hundred posters. Plenary talks are of general interest to all participants. Progress reports and special reports will be arranged in two parallel sessions and are intended to provide an in-depth view of the current state of research across the different topics of the ICPEAC community. The tutorial lectures target students and young postdocs and will provide pedagogical accounts of selected ICPEAC research areas. The conference language is English.

➤ Important Dates and Upcoming Deadlines ⬅

Registration portal open	in March 2023
Abstract submission	March 10, 2023
Financial support requests	March 10, 2023
Notification of acceptance of abstracts	April 2023
Early registration	May 19, 2023
Cancellation of registration (fee applies)	June 1, 2023
Hotel reservation (via registration website)	July 9, 2023
Transfer of registration (fee applies)	July 11, 2023
Beginning of conference	July 25, 2023

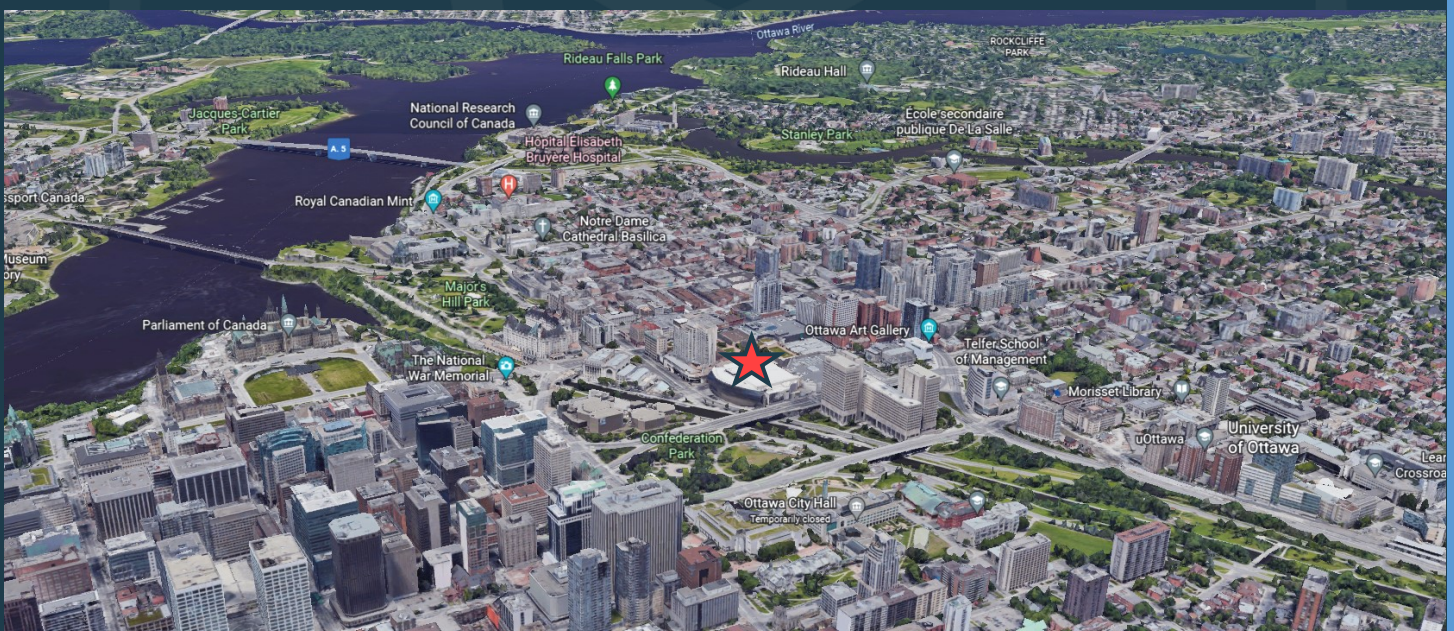
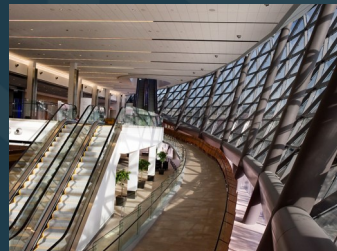
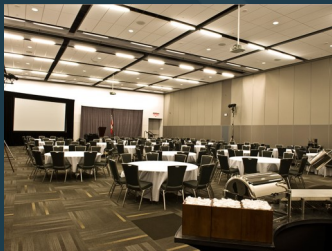
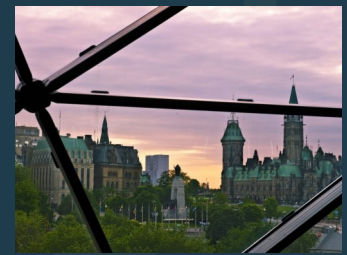
Conference Venue

Ottawa is the capital of Canada and is located on the south bank of the Ottawa River in south-eastern Ontario, Canada's most populous province. About one million people live in the city of Ottawa, and about 1.5 million in the metropolitan area. Ottawa is a popular tourist destination with a rich cultural life, world-class museums, a number of historic and heritage sites and beautiful nature that surrounds the city.

ICPEAC 2023 will be held in the Shaw Centre, Ottawa's award-winning convention centre opened in 2011. The Shaw Centre is beautifully located alongside the Rideau Canal, a UNESCO World Heritage Site, and boasts spectacular views of Ottawa's city centre and Parliament Hill, the home of Canada's federal government.

The centre is directly connected to the up-scale Rideau Shopping Centre with a large modern food court, supermarket and access to Ottawa's single subway line.

The tutorial lectures will be held at the University of Ottawa (exact location to be determined).



Registration

All participants, including invited speakers and chairpersons, are required to register for ICPEAC 2023. Please use the registration portal that can be accessed via the [registration page](#) on the conference website.

If you require assistance with the registration process, please contact us at info@icpeac2023.ca or ICPEACinfo@mci-group.com.

Registration Fees

	Early Bird Rate (until May 19)	Regular Rate (after May 19)
Regular	CA \$895	CA \$1045
Student	CA \$525	CA \$625
Dinner	CA \$85	CA \$90

All prices are given in Canadian dollars. The conversion rates as of February 28, 2023 are as follows: CA\$1.00 = 0.69€ = US\$0.73 = 0.61£ ([up-to-date rates](#)).

Inclusions

Both regular and student registration fees include the welcome reception, access to the conference and poster sessions, public lecture, exhibition, coffee breaks, internet; a printed conference handbook and online access to the complete conference program and the book of abstracts.

The conference dinner is not included in any of the registration types. Participants are welcome to purchase tickets for accompanying persons for the dinner. Additional tickets for the welcome reception are also available for purchase for CA\$40.

Tickets can be purchased online until July 6. Tax will be added to dinner and welcome reception tickets.

On-site Registration & Information Desk

The registration desk at the Shaw Centre will be open on Tuesday, July 25 from 3 pm to 7 pm, and during the conference from 8 am to 5 pm each day (subject to change). In exceptional cases, on-site registration will be possible with payment of the registration fee by credit card.

Payment

The [registration website](#) links directly to the registration portal and a secure online payment site. Payment is required to complete registration. Payment by credit card (Visa, Mastercard, American Express) and bank transfer are accepted. Bank fees must be paid by the participant. All conference and function payments must be received prior to the conference. The payment conditions can be found in the [ICPEAC 2023 Terms and Conditions](#) document, which also includes other pertinent information.

Cancellation & Refund Policy

For cancellations received prior to midnight ET, Friday, May 19, 2023, registration fees will be refunded less a service charge of CA \$100. For cancellations received after May 19, prior to midnight ET, Thursday, June 1, 2023, fees will be 50% refundable. After this date, no refunds will be made.

Alternatively, until a badge is issued, the registration can be transferred to another person for an administrative service charge of CA \$50.00. Deadline for registration transfers is midnight ET, July 11, 2023. An administrative service fee of CA \$50.00 per registration will be charged for every registration modification, including a name change. If, due to the COVID-19 pandemic, ICPEAC 2023 is not able to hold an in-person conference, in-person registrants will be transferred to a virtual registration and the fee difference will be refunded.

All inquiries or requests for additional information, modifications/transfer of registrations, and cancellations are to be communicated by email to ICPEACinfo@mci-group.com.

Processing and Handling of Personal Data

Personal data of the conference participants collected by the local organizers will be used only for statistical purposes and for mailings concerning announcements of ICPEAC 2023 and future ICPEAC conferences. The data will be shared with MCI Group Canada, ICPEAC 2023's Professional Conference Organizer. For further information on how your data will be used, we invite you to carefully read MCI's Data Protection and Privacy Policy: <https://www.mci-group.com/privacy-statement>.

Support Policy

Our general policy is to primarily help students and junior scientists (we define a junior scientist as an individual in a non-permanent position with no more than four years of research experience, career interruptions subtracted, since completion of their PhD) to attend the conference. Limited funds will also be available to support other participants presenting invited talks or contributed posters. Participants from developing countries will be given priority. **Requests for financial support should be made by email to support@icpeac2023.ca by March 10, 2023** (ATTN: ICPEAC Financial Support).

- affiliation,
- the amount of support requested,
- type and title of contribution to conference (talk/poster)

Students and junior scientists only need to provide a recommendation letter from the supervisor or the head of the department.

Applicants will be notified of the outcome of their application as early as possible and certainly before the early bird registration deadline (May 19, 2023).

In your email, please state your

- name,
- professional status (student/junior scientist/senior scientist),
- citizenship,



Organization and IUPAP Policies

Since 2019, ICPEAC is recognized as a section and subgroup within the [Atomic, Molecular and Optical Physics Division of the European Physical Society](#).

ICPEAC 2023 is organized by a [Local Organizing Committee](#) (LOC) and is governed by the International ICPEAC [Executive and General Committees](#).

The Committees abide by the [IUPAP Policies on Conferences](#), including those of Free Circulation of Scientists, maximum IUPAP conference registration fee, as well as the IUPAP policy statement on harassment at conferences. As required, two IUPAP policy statements, one on Harassment at conferences, and the other on the Free Circulation of Scientists are displayed explicitly on the [conference website](#).



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 organisers will name an advisor 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.

Sections 1 & 4 of IUPAP Conference Policies (<http://iupap.org/sponsored-conferences/conference-policies/>)

➤ Entry Regulation and Visas

Most people need a visa or an Electronic Travel Authorization (eTA) to travel to Canada – not both. Some people may only need their valid passport. Find out what you need by going [here](#).

Please refer to the Immigration, Refugee and Citizenship Canada ([IRCC website](#)) to learn about a temporary resident visa (visitor visa) and the process to apply for one. Please note that visa applications are considered on a case-by-case basis based on the information presented by the applicant. The onus is on the applicant to show that they meet the requirements for a temporary resident visa. While a special event code has been assigned to ICPEAC 2023, it does not offer any advantage to the applicant, in terms of a positive visa outcome. The applicant must meet all the [eligibility criteria](#) in order to be granted a visa. [Processing times for visa applications](#) vary depending on the visa office and the time of the year. Participants are encouraged to check the processing times calculator for guidance, but generally it is recommended to apply at least **12 weeks** in advance of the departure date to ensure that the registrant receives the visa in time for the start of the event.

Since November 10, 2016, visa-exempt foreign nationals must have an [eTA](#) to fly to or transit through Canada. [Exemptions](#) include U.S. citizens, and travelers with a valid Canadian visa. Canadian citizens, including dual citizens, and Canadian permanent residents are not eligible to apply for an eTA.

➤ Letters of Invitation

Invitation letters for visa purposes will be issued to registered and paid delegates upon request. Requests can be made directly on the registration portal where you can indicate your passport details. Please allow us 2-3 business days after payment to process your request.

Invited speakers may request a visa letter before registering for the conference in exceptional cases. Please send us your request at ICPEACinfo@mci-group.com.

Kindly note that an invitation letter for visa purposes does not imply any obligation, financial or otherwise, by ICPEAC 2023.



Sponsorship Opportunities

Sponsors can display their products such as scientific equipment & instrumentations, science books and/or specialized journals at the conference. A provision of modular booths will be available as well as display racks. They will be located at the center of the poster and coffee-break halls organized in a friendly exhibition area.

A clear advertisement of the sponsoring will be provided by the organizers to all participants, and already declared sponsors are posted on the [ICPEAC website](#).

The Local Organizing Committee pledges to use this sponsorship as much as possible to financially support students and young scientists (PhD + 4 years).

Friends of ICPEAC –\$750 USD

- Logo included on the Conference Website
- Logo included in the printed Conference Handbook
- Logo included on Conference Rotating Slides
- Logo included on Official Sponsor Signage On-site
- Logo included in the Conference Abstract Book

Exhibitor –\$2,500 USD

- All “Friends of ICPEAC” entitlements plus
- Table in exhibition area
- One complimentary registration with tickets for the welcome reception and the conference banquet

Welcome Reception –\$5,000 USD

- All “Exhibitor” entitlements plus
- Table during the welcome reception
- Signage and verbal recognition during the welcome reception

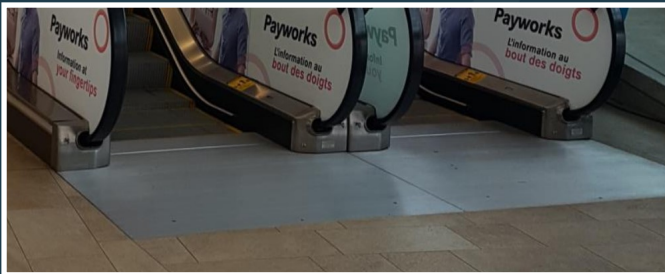
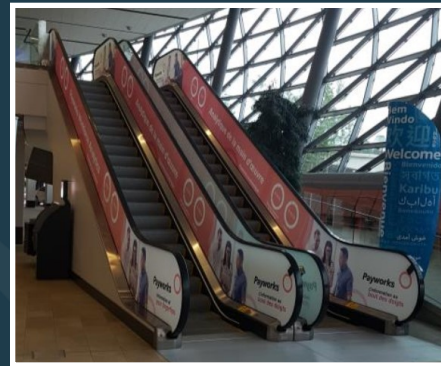
Additional Opportunities

TYPE	ENTITLEMENT	COST	AVAILABLE
Level 1	Escalator Glass Cling	\$6,750	5
Level 1/2	Level 1 Escalator Floor Cling	\$3,400	1
Level 1/2	Escalator Runner	\$1,700	1
Level 1/2	Elevator Doors	\$1,700	4
Level 2	Conference Foyer Escalator Floor Cling	\$3,400	1
Level 2	Conference Foyer Pillar Front Face Graphic	\$1,700	4
Level 2	Conference Foyer Area Glass Cling	\$420	21

➤ Sponsorship Opportunities

Escalator Glass Cling

Place your advertisement on one or up to 5 sides of the escalator between the ground floor, which is the street entrance/exit and level 2, the main conference level. Highly visible to those coming from and going to the ground level.

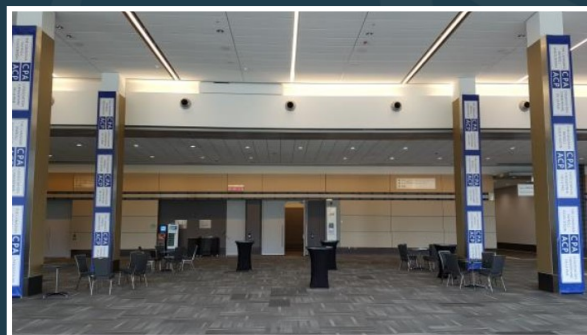
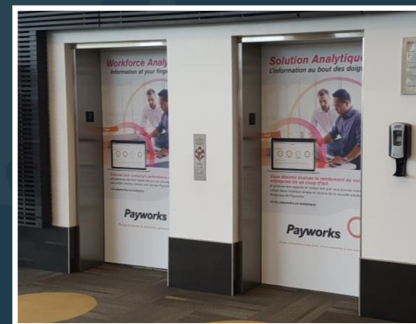


Level 1 Escalator Floor Cling

Place your advertisement at the base of the escalator between the ground floor, which is the street entrance/exit and level 2, the main conference level. Highly visible to those coming from and going to the ground level.

Elevator Doors

Place your advertisement on one or all four elevator doors between the ground floor, which is the street entrance/exit and level 2, the main conference level. Highly visible to those coming from and going to the ground level via the elevator.

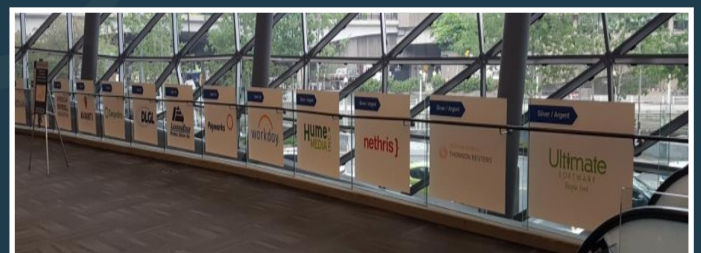


Conference Foyer Pillar Front Face

Place your advertisement on one or all four of the pillars in the conference foyer and registration area on level 2. Highly visible to everyone attending the conference.

Conference Foyer Area Glass Cling

Place your advertisement on one or all twenty-one glass panes in the conference foyer and registration area on level 2. Highly visible to everyone attending the conference.



» Our Sponsors



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PHOTONIQUE EXTRÊME



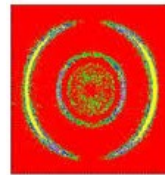
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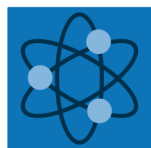
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Company
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Physical Review
Journals



physics

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**LIGHT
CONVERSION**



COPL-ULaval

Centre d'optique,
photonique et lasers

Prizes

Two prestigious prizes for young scientists will be awarded at ICPEAC 2023:



The IUPAP Early Career Scientist Prize in Atomic, Molecular and Optical Physics 2023

The Early Career Scientist Prize (previously Young Scientist Prize) in Atomic, Molecular and Optical Physics will be awarded by the International Union of Pure and Applied Physics (IUPAP) through its Commission C15 (AMO Physics). The prize includes a certificate, a medal, a 1,000 € award and an invited presentation at ICPEAC 2023.

Eligible nominees should have had, by January 1, 2023, no more than 8 years of research experience following the PhD, excluding career interruptions, and have made original and outstanding contributions to the field of AMO Physics and its community. Nominations can be made by senior members of the research community and should be sent to Rosario González-Férez (c15iupap@gmail.com), the Chair of IUPAP C15, by **March 31, 2023**.



The Sheldon Datz Prize for an Outstanding Young Researcher attending ICPEAC

The Sheldon Datz Prize supports an outstanding young researcher (graduate student/post-doc) to attend ICPEAC 2023 with a US \$1,000 award. Among equally qualified candidates, the personal/institutional funding situation that would otherwise not enable participation of the applicant at ICPEAC is taken into account. Any person who fulfills the above criteria and plans to contribute to the ICPEAC 2023 conference through either an invited talk or presentation of a poster should apply to Emma Sokell, the International Scientific Secretary of ICPEAC (emma.sokell@ucd.ie) by **April 11, 2023**.

➤ Scientific Program

The scientific program of ICPEAC 2023 will consist of five plenary lectures of 60 minutes length each (including discussion), more than 60 invited progress reports (30 minutes, including discussion), a smaller number of special reports selected from the contributed abstracts (15 minutes, including discussion), and several hundred posters. Plenary talks are of general interest to all participants. Progress reports and special reports will be arranged in two parallel sessions and are intended to provide an in-depth view of the current state of research across the different topics of the ICPEAC community. In addition, the winner of the [IUPAP Early Career Scientist Prize](#) (previously Young Scientist Prize) in Atomic, Molecular and Optical Physics will be invited to present a 30-minute talk (including discussion).

An evening lecture will be delivered by Canada's most recent Nobel Laureate in Physics, Professor Donna Strickland from the University of Waterloo, on Wednesday, July 26. The lecture is open to conference participants, accompanying persons, and the general public free of charge.

Continuing a relatively recent ICPEAC tradition that was started in 2013, a set of four tutorial lectures will take place on July 25 at the University of Ottawa (exact location to be determined). The lectures will provide pedagogical accounts of the most recent advances in the field of photonic, electronic and atomic collisions. While targeting students and young postdocs, all registered ICPEAC delegates are welcome to attend the tutorials free of extra charge.

➤ Final Conference Program

A detailed program and schedule will be available on the [conference website](#) in June 2023. The final program, including the abstracts of the tutorial, plenary, and progress report talks will be published in the printed ICPEAC 2023 Conference Handbook together with the synopses of the special reports and a list of accepted posters. The Handbook will be distributed to ICPEAC delegates at the registration desk. In addition, all accepted abstracts will be available online in a book of abstracts.

➤ ICPEAC Topics

Broad topics will include, but are not limited to:

- Photon impact—weak fields (synchrotron, FEL)
- Photon impact—strong fields (femto/attosecond physics)
- Electron collisions with atoms, molecules and ions
- Collisions between ions, atoms and molecules
- Anti-matter & other exotic particle collisions
- Field-assisted collisions
- Ultracold atomic and molecular physics
- Collisions involving surfaces and condensed matter
- Experimental techniques

➤ ICPEAC Business Meeting

All ICPEAC attendees are invited to participate in the ICPEAC business meeting on **Tuesday, August 1 at 12:30 pm**. The meeting will include the ICPEAC treasurer's and secretary's reports, the announcement of new ICPEAC committee members, a presentation on ICPEAC 2025 in Sapporo, and general information on other future ICPEAC meetings.

➤ Executive and General Committee Meeting

The ICPEAC Executive Committee will convene in the **early evening of Tuesday, July 25** in Meeting Room 210 in the Shaw Centre. The ICPEAC Executive and General Committees will meet on **Thursday, July 27 from 12:30 to 14:00** in the same room (lunch will be served). The current members of the Executive and General Committees are listed at the end of this announcement, and the new members will also be invited to the lunch meeting on Thursday.

➤ Tutorial Lectures (Tuesday, July 25, 2023)

New frontiers in attosecond science



Paul B. Corkum
 University of Ottawa, Canada

Paul Corkum graduated from Lehigh University, USA, in 1972 with a Ph. D. in theoretical physics. In 1973 he joined the staff of the National Research Council of Canada where he built one of the world's most famous groups working on the interaction of very short light pulses with matter. Corkum is a Full Professor of Physics, a Distinguished Research Chair at the University of Ottawa and directs the Joint NRC/University of Ottawa Attosecond Science Laboratory. He is a member of the Royal Societies of London and of Canada and also a foreign member of the US National Academy of Science, the Austrian Academy of Science, and the Russian Academy of Sciences. Among his many honours and recognitions, he has received the 2017 Royal Medal, for his major contributions to laser physics and the development of the field of attosecond science, as well as the National Research Council of Canada's Schneider Medal, their highest distinction bestowed upon employees. In 2018, Corkum was awarded both the SPIE Gold Medal, and the Isaac Newton Medal and Prize from the UK Institute of Physics, and is a recipient of the 2019 Willis E. Lamb Award for Laser Science and Quantum Optics. Most recently, The Wolf Foundation selected Corkum as a 2022 Wolf Prize Laureate in Physics.

Ion-matter collisions: new challenges



Emily Lamour
 Sorbonne Université, France

Emily Lamour is teacher-researcher at Sorbonne University and led the team "Clusters and Surfaces under Intense Excitation" at The Institute of NanoSciences of Paris (INSP). Since 2022, she is Deputy Director of the Physics department of the Faculty of Science and Engineering at Sorbonne University. She began her career at the CIMAP laboratory where she received her Ph.D. in physics from the University of Caen (France) in 1997. There, she worked on several experiments carried out at GANIL to explore the dynamics of the ion-solid interaction at high energy. Then, she joined the Atomic Physics group of GSI (Darmstadt, Germany) to work on the ion trap facility SHIPTRAP and to participate in mass measurements of radioactive ions at ISOLTRAP at CERN (Geneva, Switzerland). In 2000, she became lecturer and joined the Solid State Physics Group at the Pierre and Marie Curie University. Ten years later, she obtain a professor position at Sorbonne University. She studies the ion-matter interaction dynamics with matter ranging from ions to solids including surfaces and clusters.

Amplitude and phase: from cross sections to delays in photoionization



Eva Lindroth
 Stockholm University, Sweden

Eva Lindroth got a PhD with a focus on relativistic many-body calculations from University of Gothenburg 1987, and went afterwards for a post. doc. in Oxford to work on parity non-conservation. Since the mid nineties she is working in Stockholm and is using many-body tools to study the dynamics initiated by electrons or photons when they collide with atoms. Today her main interest is in attosecond physics and the new possibilities it offers to study phase variations of the ionized electron wave-packet, and in particular the role of autoionizing resonances.

Electron molecule collision calculations: a primer



Jonathan Tennyson
 University College London, UK

Jonathan Tennyson is Massey Professor of Physics at University College London and a Fellow of the Royal Society. His research involves using quantum mechanics to study molecular problems of importance in areas such as plasma, atmospheric or astro- physics. After studying Natural Sciences at Cambridge, he did a PhD in Theoretical Chemistry at the University of Sussex. He was post-doc at the University of Nijmegen in the Netherlands. He then moved to Daresbury Laboratory in the UK where he started doing electron-molecule collision calculations before moving to an academic position at UCL. He has been involved in the development of successive versions of the UK molecular R-matrix codes which provide a computational framework for performing electron collision calculations. In 2004 he co-founded Quantemol Ltd. which sells an expert system to run electron collision calculations, plasma modelling software and does consultancy. He is also co-founder and Chair of Blue Skies Space Ltd. whose aim is to provide space science data directly to the global scientific community. His current main research activity is running the European Research Council funded ExoMol project (www.exomol.com) which provides molecular line lists and other spectroscopic data for studies of exoplanet and other hot atmospheres.

Plenary Lectures (July 26–August 1, 2023)

Why are atomic and molecular dimers so exciting?



Amine Cassimi
 CIMAP laboratory, CEA/CNRS/
 ENSICAEN/UNICAEN, France

Amine Cassimi is a senior scientist at the CIMAP laboratory. During his PhD in Physics received from the University of Caen, and in collaboration with the Kastler Brossel laboratory (ENS-LKB), he constructed the first diode pumped solid state laser at 1.08 μm and used it for He optical pumping experiments. He joined the CIMAP AMO group in 1990, which is one of the three pioneering groups who developed the COLTRIMS technique, and initiated atomic and molecular collision experiments with GANIL facility (Caen) ion beams. He is a fellow of the French Physical society (SFP). He has served as the co-chair of HCI (2002) and ISAC (2011) conferences and is currently on several Scientific Advisory Committees (GANIL ion facility, IP21 laboratory) and International Advisory Committees (HCI, ISAC). He was the Director of the CIMAP laboratory from 2014 to 2020. His current research activities concentrate on atomic and molecular dimers interaction dynamics with slow and swift highly charged ions.

A glimpse into the world of ICD and ETMD

Lorenz Cederbaum did his doctoral studies in Chemistry and completed his habilitation in Physics, both at the Technical University of Munich. Then he joined the University of Freiburg as an Associate Professor of Physics, and after three years he moved to the University of Heidelberg as Professor of Theoretical Chemistry. Since 2017, he occupies the position of Senior Professor for Theoretical Chemistry at the University of Heidelberg. He is a member of the Leopoldina National Academy of Sciences and of the International Academy of Quantum Molecular Science and is Visiting Distinguished Professor at the Technion in Haifa, Israel. He received two ERC Advanced Investigators Grants (2008, 2016) towards the study of ICD, and ETMD and ICEC and other related nteratomic processes. He was awarded honorary doctorates in 2009 from Sofia University (Bulgaria), in 2012 from the Technion, Israel Institute of Technology, and in 2016 from the University of Debrecen (Hungary). Among others, his research areas comprise the study of phenomena of electron correlation in molecules, clusters, and solids; multimode nuclear dynamics in molecules including conical intersections; atoms, and molecules in strong fields; Bose-Einstein condensation; and ultrafast electronic processes in chemical media.

Lorenz S. Cederbaum

Ruprecht-Karls University
 Heidelberg, Germany



Ionization in intense laser fields beyond the electric dipole approximation



Ursula Keller
 ETH Zürich, Switzerland

Ursula Keller has been a tenured professor of physics at ETH Zurich since 1993 and served as a director of the Swiss research program NCCR MUST in ultrafast science from 2010 to 2022. She received a „Diplom“ at ETH Zurich in 1984, a Ph.D. at Stanford University USA in 1989, and was a Member of Technical Staff (MTS) at Bell Labs USA 1989 to 1993 where she started her independent research. She has been a co-founder and board member for Time-Bandwidth Products (acquired by JDSU in 2014), for GigaTera (acquired by Time-Bandwidth in 2003) and a board member of Jenoptik since 2022. Her research interests are exploring and pushing the frontiers in ultrafast science and technology. Awards include the Swiss Science Prize Marcel Benoist (2022), OSA Frederic Ives Medal/Jarvis W. Quinn Prize (2020), SPIE Gold Medal (2020), IEEE Edison Medal (2019), European Inventor Award for lifetime achievement (2018), OSA Charles H. Townes Award (2015), LIA Arthur L. Schawlow Award (2013), ERC advanced grants (2012 and 2018), and EPS Senior Prize (2011). She supervised and graduated 93 Ph.D. students, published >500 journal publications and according to Google Scholar has an h-index of 119 with more than 50'000 citations.

Ultrafast quantum simulation and quantum computing with ultracold atom arrays at quantum speed limit

Kenji Ohmori is a Chair Professor at the Institute for Molecular Science (IMS), National Institutes of Natural Sciences, Japan. After receiving his Ph.D. from The University of Tokyo in 1992, he was a Research Associate and an Associate Professor at Tohoku University. In 2003 he was appointed a Full Professor at IMS. Professor Ohmori is currently leading a large-scale/long-term national project on the development of ultrafast quantum simulators and quantum computers (2018–2030) generously supported with priority by the MEXT and Cabinet Office of the government of Japan, expected as one of the top runners in quantum technologies. He has been celebrated with many honors. Highlights include the Japan Academy Medal (2007), Fellow of the American Physical Society (2009), Humboldt Research Award from the government of Germany (2012), and Commendation for Science and Technology by the Minister of MEXT (2018). Most recently, in November 2021, he was awarded a national honor, the Medal with Purple Ribbon, by His Majesty the Emperor of Japan for his achievements on quantum physics. The Medal with Purple Ribbon is awarded for inventions and discoveries in science and technology, and for outstanding achievements in the fields of science, sports, art and culture.

Kenji Ohmori

Institute for Molecular Science, National
 Institutes of Natural Sciences, Japan



Electron impact ionization as a fundamental few-body process and a tool to study molecular dynamics



Alexander Dorn
 Max-Planck-Institut für Kernphysik, Germany

Alexander Dorn is head of a research group at the Max Planck Institute for Nuclear Physics (MPIK) in Heidelberg with the Division Director Thomas Pfeifer. He received his Diploma Degree from University Karlsruhe and PhD from University of Freiburg in 1994 under supervision of Werner Mehlhorn. In 1996–1997 he had a postdoc fellowship at the Research School of Physics at the Australian National University with Erich Weigold and Stephen Buckman. Subsequently he joined Joachim Ullrich at Freiburg University where he did his Habilitation in 2001. In the same year he followed Joachim Ullrich to the MPIK to his present post. He is lecturer at the University of Heidelberg.

Alexander Dorn is head of a research group at the Max Planck Institute for Nuclear Physics (MPIK) in Heidelberg with the Division Director Thomas Pfeifer. He received his Diploma Degree from University Karlsruhe and PhD from University of Freiburg in 1994 under supervision of Werner Mehlhorn. In 1996–1997 he had a postdoc fellowship at the Research School of Physics at the Australian National University with Erich Weigold and Stephen Buckman. Subsequently he joined Joachim Ullrich at Freiburg University where he did his Habilitation in 2001. In the same year he followed Joachim Ullrich to the MPIK to his present post. He is lecturer at the University of Heidelberg.

Progress Reports

Heavy Particles, Cold Matter

Lars Henrik Andersen, Aarhus University, Denmark
Spectroscopy of biological molecular ions

Bindiya Arora, Guru Nanak Dev University, India
Modeling of atomic systems for cold atom physics, atomic clocks and quantum computing

Raul Barrachina, Centro Atomico Bariloche, Argentina
Coherence and contextuality in heavy particle scattering

Doerte Blume, The University of Oklahoma, USA
Structure and dynamics of He clusters

Ana de Barros, Federal Center for Technological Education - CEFET/RJ, Brazil
Ion and photon processing of astrophysical ice analogues

Tetsuya Hama, The University of Tokyo, Japan
Understanding the surface physics and chemistry of interstellar dust and atmospheric aerosols

Dag Hanstorp, University of Gothenburg, Sweden
Photodetachment studies with electrostatic ion-beam storage rings

Stephen Hogan, University College London, UK
High Rydberg states in NO

Masaki Hori, Imperial College London/Johannes-Gutenberg University Mainz/Max Planck Institute of Quantum Optics, UK/Germany
High precision spectroscopy of pionic helium atoms

Michael Lestinsky, GSI, Germany
First experiments at the CRYRING facility at GSI/FAIR

Robert Loetzsch, Friedrich Schiller University Jena, Germany
New test of bound-state QED: high-resolution measurement of an intra-shell transition in He-like U

Deepankar Misra, Tata Institute of Fundamental Research, India
Fraunhofer type diffraction in atomic collisions using a new ColTRIMS apparatus

Anna Niggas, TU Wien, Austria
Ion impact-induced surface charge dynamics in freestanding 2D materials

Patrick Rousseau, UNICAEN - CIMAP, France
Heavy ion interactions with biological and biomimetic systems

Aephraim Steinberg, University of Toronto, Canada
Putting a new spin on quantum tunneling

Baoren Wei, Fudan University, China
Dissociation mechanisms of multiply ionized small organic molecules by heavy ion impact

Roland Wester, Universität Innsbruck, Austria
Quantum mechanical dynamics of cold molecular few-body systems

Wania Wolff, Universidade Federal do Rio de Janeiro, Brazil
Ionization of water, ammonia, and methane by proton collisions: experimental and electronic configuration studies

Tanya Zelevinsky, Columbia University, USA
Quantum clocks with ultracold molecules

Henning Zettergren, Stockholm University, Sweden
Survival of free-flying polycyclic aromatic hydrocarbon ions

Leptons

Igor Bray, Curtin University, Australia
Collisions involving antimatter

Martin Centurion, University of Nebraska-Lincoln, USA
Ultrafast imaging of molecular dynamics with electron diffraction

Rakesh Choubisa, BITS Pilani, India
Ionization studies of water molecules using twisted electron beams

Maomao Gong, University of Science and Technology of China, China
Electron-impact single ionization of molecules: multicenter distorted-wave method and its applications

Dermot Green, Queen's University Belfast, UK
Many-body theory of positron binding to polyatomic molecules

Elisabeth Gruber, Universität Innsbruck, Austria
Spectroscopy of molecular ions at cryogenic temperatures - development of a novel method

Karel Houfek, Charles University, Czech Republic
Dissociative electron attachment and electron-impact vibrational excitation of molecules

Jaroslav Kocisek, J. Heyrovsky Institute of Physical Chemistry, Czech Republic
Electron collisions with systems of increasing complexity

Janina Kopyra, Siedlce University, Poland
Electron-induced fragmentation of molecules and complexes

Ana Isabel Lozano, Universidade NOVA de Lisboa, Portugal
Electron induced bond breaking in radiosensitizing compounds

Xinwen Ma, Institute of Modern Physics, Chinese Academy of Sciences, China
Progress on dielectronic recombination spectroscopy at heavy-ion storage rings

Giseli Moreira, Universidade Federal do Paraná, Brazil
Effect of methylation on low-energy elastic scattering from molecules

Yugo Nagata, Tokyo University of Science, Japan
Fundamental studies of positronium using a high-quality positronium beam

Oldrich Novotny, Max-Planck-Institut für Kernphysik Heidelberg, Germany
Dissociative recombination of molecular ions in a cryogenic storage ring

Takuma Okumura, Tokyo Metropolitan University, Japan
Calorimetric spectroscopy of muonic atoms

Ioan F. Schneider, Université Le Havre Normandie, France
Electron-induced reactivity of molecular cations relevant for astrochemistry and cold plasmas

John Sheil, ARC/NL/Vrije Universiteit Amsterdam, The Netherlands
Modeling of laser-driven EUV light source plasma for nanolithography

Marcio Varella, Universidade de São Paulo, Brazil
Chiral effects in dissociative electron attachment

Photons

Vitali Averbukh, Imperial College London, UK
Coherent hole dynamics in attosecond photoionization

Jens Biegert, ICFO Barcelona, Spain
Progress in electron recollision self-diffraction studies

Diego Boll, CONICET-UNR, Argentina
Polarization control in two-color atomic ionization

Rebecca Boll, European XFEL, Germany
Multi-photon processes and Coulomb explosion in molecules

Carlo Callegari, Elettra – Sincrotrone Trieste, Italy
Phase-controlled multiple pulse experiments with atoms and molecules

James Cryan, SLAC National Accelerator Laboratory, USA
Coherent and nonlinear attosecond spectroscopy in molecules

Nicolas Douguet, Kennesaw State University, USA
Attosecond and strong field physics in correlated multielectron systems

Smita Ganguly, Lund University, Sweden
Soft x-ray ionization of molecular systems

Shima Gholam Mirzaei, University of Ottawa, Canada
High harmonics from metal surfaces

Akiyoshi Hishikawa, Nagoya University, Japan
Ultrafast coincidence spectroscopy with XUV FEL

Umesh Kadhane, IIST Trivandrum, India
Proton and photon collisions with nitrogenated PAH molecules

Anatoli Kheifets, Australian National University, Australia
Phase and time retrieval from angular streaking of XUV atomic ionization

Xiaojun Liu, Innovation Academy of Precision Measurement Science and Technology, Chinese Academy of Sciences, China
Ultrafast molecular imaging with intense femtosecond laser fields

Yunquan Liu, Peking University, China
Strong-field ionization of atoms with sculptured laser fields

Aleksandar Milosavljevic, SOLEIL Synchrotron, France
Synchrotron radiation studies on complex gas-phase molecules and nanoparticles

Saikat Nandi, Institut Lumière Matière, CNRS, France
Observation of Rabi dynamics with a short-wavelength free-electron laser

Marcel Ngoko Djiokap, University of Nebraska-Lincoln, USA
Atomic photoionization with attosecond pulses

Akinobu Niozu, Hiroshima University, Japan
Probing transient structures of nanoparticles by single-particle X-ray diffraction

Alicia Palacios, Universidad Autónoma de Madrid, Spain
Ultrafast electron dynamics in molecules

Zsuzsanna Pápa, Wigner RCP/ELI-ALPS, Hungary
Femtosecond control of plasmonic field enhancement by mode-mixing

Annemieke Petrigani, University of Amsterdam, The Netherlands
Spectroscopy of interstellar complex organic molecules

Nina Rohringer, Universität Hamburg, Germany
Nonlinear X-ray spectroscopy at FELs

Markus Schöffler, Goethe-Universität Frankfurt, Germany
Photoelectron circular dichroism: energy dependence and sensitivity to molecular configuration

Chuncheng Wang, Jilin University, China
Imaging excited state-resolved nuclear motion of water with picometer-femtosecond precision

Zengxiu Zhao, National University of Defense Technology, China
Strong field induced ionic coherence for air lasing and supercontinuum generation

Abstracts

We invite abstract submissions for regular contributions to ICPEAC 2023 from the whole community. The abstracts will be reviewed by the ICPEAC Program Committee consisting of the members of the Executive and General Committees. Accepted abstracts will be gathered in a book of abstracts which will be made available on the conference website. A small subset of the submissions will be selected as special reports to be delivered in appropriate oral sessions, while the others will be assigned to poster sessions.

Please note that the synopses of the abstracts selected for special reports will appear in the printed conference handbook. Acceptance notifications will be sent out by email at the end of April.

Instructions

If you are an invited (tutorial, plenary or progress report) speaker, please do not use the portal for submitting an abstract for your talk, but follow the instructions provided by email.

The length of each abstract is strictly limited to one page. Abstracts should be informative, carefully prepared, with new insights stressed. The abstract should enable the Program Committee to judge the scientific merit of the paper.

Abstract Preparation

Please prepare your abstract using these [Word](#) or [LaTeX](#) templates (a compressed archive including both templates and examples can be found [here](#)).

The templates provide detailed instructions for the preparation of your abstract. Please do not modify the page layout or paragraph styles. Your abstract may include one figure. Before submission, the abstract must be converted to pdf format. In the end your abstract should look like [this sample abstract](#).

The size of your pdf-file should not exceed 5 MB. Please name your abstract "Hoton_P.pdf" if the last name of the first author is "Hoton" and the first letter of their first name is "P". In case you submit more than one abstract on behalf of the same first author, append a number so that your files have the names "Hoton_P_1.pdf", "Hoton_P_2.pdf" etc.

Submission

When you go to the submission portal, you will be asked for information on presenter and author(s) and whether you want your abstract to be considered for an oral special report. In order to help us sort the abstracts you will be asked which projectile and target describe your work best.

As a new element, in addition to purely scientific abstracts we invite "in memoriam" abstracts meant to pay tribute to colleagues who passed away since we last met in person in 2019 and the ICPEAC-related physics they championed and helped move forward. Accordingly, you will be asked about this too. An example of such an abstract can be found [here](#).

Please note that any submitted abstract, even if accepted by the ICPEAC Program Committee, will not be included in the conference program if none of the authors register for the conference.

The abstract submission deadline is **March 10, 2023**.

[submit here](#)

Posters

Each accepted contribution, including those selected for an oral special report, will be presented as a poster in one of the daily poster sessions at the conference. As usual, the ICPEAC poster sessions represent the main forum for discussions and scientific exchange and interactions.

Each poster is limited to **A0 size in portrait format** (841 mm width times 1189 mm height). Posters may be presented only if the corresponding abstract has been accepted and at least one of the authors listed has registered for the conference. A small number of post-deadline posters might be considered for presentation provided space is available. Each registered poster will be assigned a day for presentation and a board at which it should be displayed.

Travel Information

[Ottawa Macdonald-Cartier International Airport](#) (YOW) is Canada's sixth-busiest airport (that means, it is usually quiet, quick and pleasant, and has only short line-ups at security checks or passport controls). YOW offers many daily domestic and international flight options. It is located in the south end of the city approximately 10 km away from the downtown core. The quickest way to get from Ottawa Airport (YOW) to the Shaw Centre is to taxi which costs CA \$40 - \$50 and takes 15 min.

Ottawa can also be reached by [train](#) or car from Montreal (in approximately two hours) and Toronto (in four to five hours), the two largest cities in Canada. Within [Ottawa public transit](#) is mainly provided by a bus network, and a brand new one and a half subway lines (work in progress).

Ottawa has a continental climate with warm summers. Average max. and min. temperatures in July are around 27 °C (80 °F) and 16 °C (60 °F).

The City of Ottawa

Ottawa is the capital of Canada and is located on the south bank of the Ottawa River in south-eastern Ontario, Canada's most populous province. About one million people live in the city of Ottawa, and about 1.5 million in the metropolitan area.

Ottawa is a popular tourist destination with a rich cultural life, world-class museums, a number of historic and heritage sites and beautiful



rants and bars, the [National Gallery of Canada](#), the [Canadian Museum of History](#), the [Canadian Museum of Nature](#), the [Canadian War Museum](#) and many more, and of course, Parliament Hill with its emblematic Gothic revival suite of buildings.

Outdoor activities include hiking, cycling, canoeing, white water rafting, kayaking, sailing and, of course, swimming.



Just north of Ottawa in the town of Chelsea one can find a world class sauna and spa facility [Le Nordik](#). And within a 45mins drive east of Ottawa

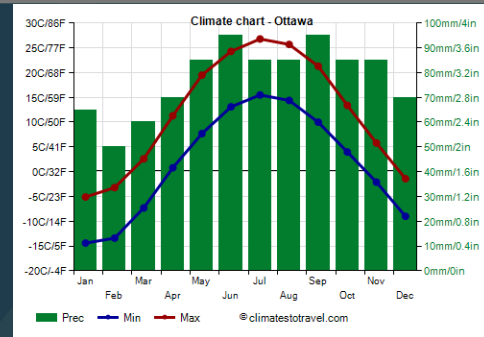


there is [Calypso waterpark](#). Opened in 2010, Calypso is Canada's largest themed waterpark. It has 35 waterslides, one of the largest pools on the continent, the largest wave pool in the country, and the tallest freestanding waterslide tower in North America.



nature that surrounds the city.

Top attractions include the ByWard Market, a retail and entertainment district that consists of a local farmers' market, art galleries, restaura-



Hotels and Accomodation

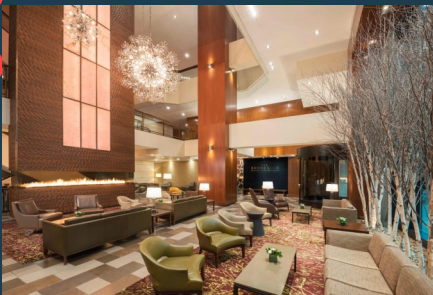
Ottawa offers a broad range of hotel and other accommodation options, many of which are in walking distance to the Shaw Centre.

LOC members have often recommended the [Byward Blue Inn](#) and the [Business Inn and Suites](#).

Local [AirBnB](#) and [VRBO](#) offers add to the mix, however, recently implemented strict short-term rental regulations in the City of Ottawa have led to a reduced market size for these platforms.

Special Rates

For ICPEAC 2023 participants we have secured a contingent of rooms at a discounted rate at the [Westin Ottawa](#).



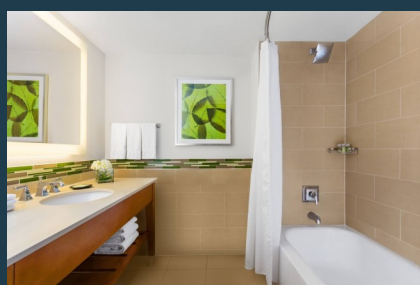
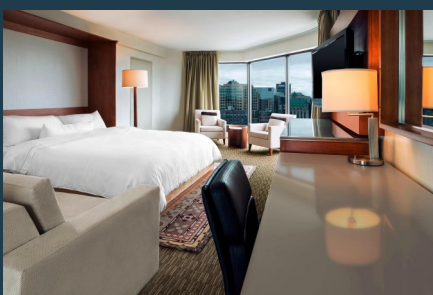
Perfectly located in the heart of the Ottawa Business District, the hotel is connected to the Shaw Convention Center and the Rideau Shopping Centre. It is only steps away from the waterside, and surrounded by dozens of shopping, dining, and leisure establishments. The Westin has an in-house restaurant and a steak house. It also features a saltwater pool and hot tub, a fitness centre and a bicycle rental for its guests.



The ICPEAC rate includes free high-speed internet.

[Book here](#) available rooms at the preferred ICPEAC rate until July 9, 2023.

You can cancel your reservation up to 11:59pm 3 days prior to your arrival date.

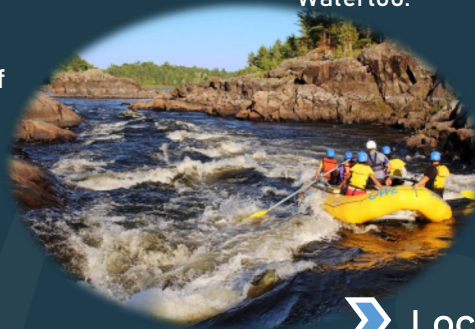


➤ Social Program and Activities

The social program will include a welcome reception, a public lecture, and a conference dinner and is open to ICPEAC delegates and accompanying persons. The weekend is reserved for sightseeing and excursions.

➤ Whitewater Rafting

Just one hour west of the Capital the mighty Ottawa river is home to one of the best [whitewater rafting](#) in Canada with class III to V rapids. And it is warm whitewater! ICPEAC participants and accompanying persons will have access to special rates and transport will be organized.



➤ Public Lecture

A public lecture will be delivered by Canada's most recent Nobel Laureate in Physics, Professor Donna Strickland from the University of Waterloo.



➤ Montreal



There will be a day trip organized to the vibrant city of Montreal. Visit the old town, walk up Mount Royal, rent a bicycle and ride on the

Formula One track, explore the museums and the multicultural neighborhoods.

➤ Local activities



The [Capital Pathway](#) is one of the most extensive pathway networks in North America. It includes over 200 kilometres of off-road, multi-use pathways, extending

from Gatineau Park, through Ottawa-Gatineau and into the Greenbelt. It connects the Capital's parks, gardens, museums and attractions. Bicycles can be rented next to the conference centre at [rent-a-bike](#).

➤ Upper Canada Village

The living history museum [Upper Canada Village](#) is a magical experience, transporting you back in time to the 1860s. Authentic buildings, the activities that take place throughout the site, and the historic interpreters bring history to life.



[Gatineau Park](#) is the National Capital Region's conservation park. The largest green space in the region, the Park occupies an area of more than 361 square kilometres,

and is a place of rich and unique biodiversity. It is the second-most visited park in Canada, and a destination for outdoor enthusiasts

to engage in recreational activities such as hiking, swimming, canoeing, road cycling and mountain biking, and [zip-lining](#). Canoes can be [rented](#) at Lac Philippe and Lac La Pêche.



➤ Toronto and Niagara Falls

The world's most famous water falls and Canada's largest city are within driving distance for the weekend. The Niagara peninsula with its quaint towns and vineyards is also the world largest producer of ice wine.



Only 20mins north of Ottawa thrill-seekers can [bungee jump](#) from the highest platform in Canada, towering 200 feet above a limestone quarry lagoon. (It was recently personally tested by prime minister Trudeau and his children in October 2022.)

Satellite Meetings

ICPEAC has a long tradition of being accompanied by thematically focused satellite meetings. During the days just before and after ICPEAC 2023, the following satellite meetings will be organized in Canada and the United States:

ISIAC

28th International Symposium on Ion-Atom Collisions

July 21-23, 2023, Rolla, Missouri (USA)

Michael Schulz
and
Daniel Fischer
(Missouri University S&T)

ISWAMP

7th International Symposium on Intense Field, Short Wavelength Atomic and Molecular Processes

July 21-23, 2023, St.Sauveur, Québec

François Légaré and Heide Ibrahim (INRS), and André Staudte (NRC & University of Ottawa)

EPIC-MAN

2nd Symposium on Electron, Photon and Ion Collisions on Molecular and Atomic Nanostructures

July 24, 2023, Ottawa, Ontario

Richard Wilhelm (TU Wien) and Thomas Brabec (University of Ottawa)

POSMOL

XXI International Workshop on Low Energy Positron and Positronium Physics and XXIII International Symposium on Electron-Molecule Collisions and Swarms

August 3-6, 2023, Notre Dame, Indiana (USA)

Sylwia Ptasinska (University of Notre Dame) and Daniel Slaughter (LBNL)

COPIAMC

22nd International Symposium on Correlation, Polarization and Ionization in Atomic and Molecular Collisions

August 3-5, 2023, Toronto, Ontario

Marko Horbatsch (York University) and Klaus Bartschat (Drake University)

Related Meetings

The 11th International Symposium "Atomic Cluster Collisions" ([ISACC 2023](#)) will take place on July 20-22, 2023 in Hveragerði, Iceland.

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ICPEAC XXXIV (Sapporo, Japan 2025)

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