



ECT*
EUROPEAN CENTRE
FOR THEORETICAL STUDIES
IN NUCLEAR PHYSICS AND RELATED AREAS

ExCiTing News

Bira van Kolck
Director



NuPECC meeting, June 2025

Outline

Mission & Structure

Board

2025 activities

2026 proposals

Funding



ECT* mission

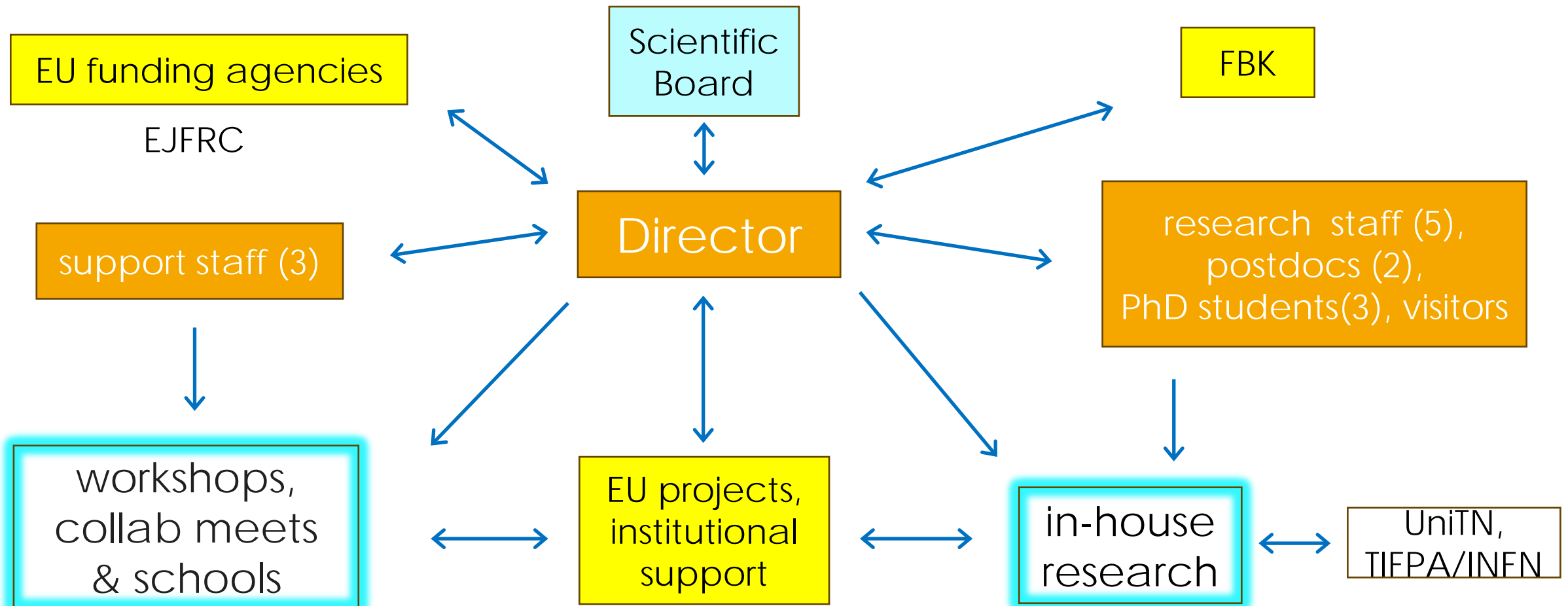


- ✓ to be a center at the frontline of research in nuclear theory
- ✓ to promote contact with experiment and related areas
- ✓ to further train young researchers

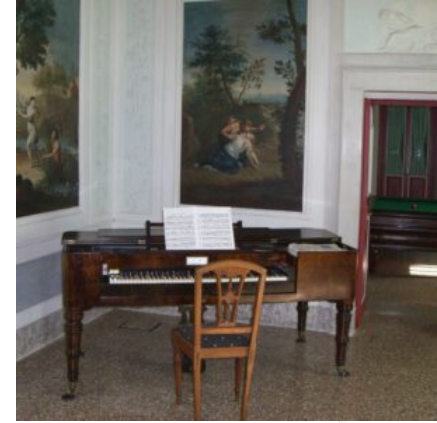
Unique venue in the
European nuclear
ecosystem

- established in 1993 in community-driven approach that continues today
- funding through EU funding agencies, institutions, and projects
- sponsored by Province of Trento, now through Fondazione Bruno Kessler
- institutional member of NuPECC

ECT* structure



Scientific Board news



[Sonia Bacca](#) | University of Mainz (D)

[Gilberto Colangelo](#) | University of Bern (CH)

[Denis Lacroix](#) | CNRS/IN2P3 (F)

[Gail McLaughlin](#) | NC State University (USA)

[Alexandre Obertelli](#) | TU Darmstadt (D)

[Assumpta Parreño Garcia](#) | University of Barcelona (E)

[Barbara Pasquini](#), Board Chair | University of Pavia (I)

[Vittorio Somà](#) | CEA Saclay (F)

[Eberhard Widmann](#) | NuPECC / Stefan Meyer Institute, Austrian Academy of Sciences (A)

Ex officio: [Albino Perego](#) | University of Trento (I)

last Board meeting: June 2025

Da: ECT* Direzione <direzione@ectstar.eu>

Data: 16 gennaio 2025 alle ore 08:29:23 CET

A: undisclosed-recipients;

Oggetto: Call suggestions new member ECT* Scientific Board

Dear ECT* Associate,

we are looking for suggestions concerning the nomination of **a new member of the ECT* Scientific Board.**

The mandate of Denis Lacroix will end in June 2025. The ECT* Scientific Board is particularly interested in researchers working on strongly interacting matter at extreme conditions. The Board aims for a broad representation in terms of scientific experience, nationality and gender. Suggestions that reflect this modern idea of diversity will receive particular attention.

Please send your suggestions, together with a short statement about suitability, not longer than 200 words, by e-mail to Susan Driessen (driessen@ectstar.eu). To be useful, your e-mail should arrive no later than **May 01, 2025.**

Best regards,

Ubirajara van Kolck

Director ECT*

9 (some multiple) nominations received
selection: June 2025
NuPECC endorsement request: soon after

2025 PROGRAM OF ACTIVITIES

FEBRUARY 17-21	Key Reactions in Nuclear Astrophysics A. TUMINO (Università degli Studi di Enna "Kore" & INFN-LNS), C. BERTULANI (Texas A&M University-Commerce), R. DIEHL (Max Planck Institut für Experimentelle Physik), J. JORDI (Technical University of Catalonia), L. TRACHE (IFIN-HH)	21-25	Penetrating Probes of Hot High-μB Matter: Theory Meets Experiment E. SCOMPARNI (INFN Torino), T. GALATYUK (TU Darmstadt), M. LOMBARDO (INFN Firenze), R. RAPP (Texas A&M University), G. USAI (Università di Cagliari)
MARCH 3-7	Scale Setting: Precision Lattice QCD for Particle and Nuclear Physics A. BAZAVOV (Michigan State University), S. COLLINS (University of Regensburg), R. SOMMER (DESY & Humboldt-Universität zu Berlin)	JUL/AUG 28-01	New Perspectives in the Charge Radii Determination for Light Nuclei F. HÄGELSTEIN (JGU Mainz & PSI Villigen), L. GASTALDO (Kierchhoff-Institute for Physics), N. PAUL (Laboratoire Kastler Brossel), R. POHL (JGU Mainz)
24-28	Holographic Perspectives on Chiral Transport and Spin Dynamics M. KAMINSKI (University of Alabama), K. LANDSTEINER (IFT Madrid), D. KHARZEEV (Stony Brook University/BNL), U. GURDUR (Utrecht University)	25-29	Bridging Analytical and Numerical Methods for Quantum Field Theory A. CHERMAN (University of Minnesota), A. ATHENODOROU (The Cyprus Institute), T. JACOBSON (University of California, Los Angeles), M. CASELLE (University of Torino)
MAR/APR 31-04	Mechanical Properties of Hadrons: Structure, Dynamics, Visualization P. SCHWETZER (University of Connecticut), S. DIEHL (University Gießen), K. JDO (University of Connecticut), C. LOBDE (École Polytechnique), B. PASQUINI (Università di Pavia), C. WEISS (JLab)	SEPTEMBER 01-05	Hamiltonian Lattice Gauge Theories: Status, Novel Developments and Applications C. URBACH (University of Bonn), K. JANSEN (DESY Zeuthen / COTA), R. LEWIS (York University), G. MARGNIFICO (University of Bari), S. ROMITI (University of Bari), E. RICO ORTEGA (ikerbasque)
APRIL 14-18	Lepton Flavour Change in Nuclei K. BENNACEUR (IP2I, IN2P3), S. DAVIDSON (LUPM, IN2P3)	08-12	Analytic Structure of QCD and Yang-Lee Edge Singularity V. SKOKOV (North Carolina State University), G. BAŞAR (University of North Carolina Chapel Hill), C. SCHMIDT (Universität Bielefeld)
MAY 05-09	Quantum Science Generation 2025 A. BALDAZZI (University of Trento), C. BENAVIDES-RIVEROS (INO-CNR Pitaevskii BEC Center), C. CAPECCI (UniTn, Pitaevskii BEC Center), D. DE BERNARDIS (INO-CNR Pitaevskii BEC Center), C. JOHANSEN (INO-CNR Pitaevskii BEC Center), F. MANTEGAZZINI (FBK) et al.	22-26	Attractors and Thermalization in Nuclear Collisions and Cold Quantum Gases M. HELLER (Ghent University), J. BERGES (Heidelberg University), J. BREWER (University of Oxford), T. LAPPI (University of Jyväskylä), M. SPALINSKI (National Centre for Nuclear Research)
12-16	Nonequilibrium Phenomena in Superfluid Systems: Atomic Nuclei, Liquid Helium, Ultracold Gases, and Neutron Stars P. MAGIERSKI (Warsaw University of Technology), B. HASKELL (Nikolaus Copernicus Astronomical Center), G. ROATI (University of Florence, LENS), G. WLAZLOWSKI (Warsaw University of Technology)	OCTOBER 06-09	Superconducting Devices for Quantum Optics and Quantum Simulations F. MANTEGAZZINI (FBK), I. CARUSOTTO (CNR-INO), N. ROHM (CNRS-Institut Neel), M. ESPOSITO (CNR-SPIN), N. CRESCINI (FBK), F. AHRENS (FBK)
19-23	The Complex Structure of Strong Interactions in Euclidean and Minkowski Space J. SKULLERUD (National University of Ireland), M. GÓMEZ-ROCHA (Universidad de Granada), T. FREDERICO (Instituto Tecnológico de Aeronáutica), O. OLIVEIRA (Universidade de Coimbra), M. PELEAZ (Universidad de la República Uruguay), P. SILVA (Universidade de Coimbra), F. SIRINGO (Università di Catania)	13-24	Pan-American Few-Body Physics Boot Camp: Fostering Collaboration G. HUPIN (JLab), T. FREDERICO (Instituto Tecnológico de Aeronáutica), S. KÖNIG (North Carolina State University), A. LEPINE-SZILY (University of São Paulo)
JUNE 09-13	Universality in Strongly-Interacting Systems: from QCD to Atoms J. KRISCHER (SRM University AP), D. BLUME (The University of Oklahoma), R. BRICENO (UC Berkeley), L. CONTESSI (Université Paris-Saclay, JLab, CNRS), M.P. VALDERRAMA (Beihang University)	NOVEMBER 03-07	Neutron-Capture Reactions for Astrophysical Processes A. SPYROU (Michigan State University), S. GORIELY (IAA-ULB), A. LARSEN (University of Oslo), S. LIDDICK (Michigan State University), D. MÜCHER (University of Cologne), M. WIEDEKING (Lawrence Berkeley National Lab)
JUNE/JULY 16-04	Doctoral Training Program/TALENT School: Quantum Computing for Nuclear Physics A. BAZAVOV (Michigan State University), Z. DAVIDI (University of Maryland), M. HORTHAUS (University of Oslo and Michigan State University), R. LAROSE (Michigan State University), D. LEE (Michigan State University), A. ROGGERO (University of Trento)	17-21	ISNET-11: Information and Statistics in Nuclear Experiment and Theory A. EKSTROM (Chalmers University of Technology), D. PHILLIPS (Ohio University), A. LÖVELL (Los Alamos National Laboratory)
07-09	Theory Service for the Low Energy Nuclear Physics Community: a Hands-on Workshop G. COLO (University of Milano and INFN), J. DUDEK (Jüds and IPHC/IN2P3/CNRS, Strasbourg), M. RODRIGUEZ-GALLARDO (University of Sevilla)	DECEMBER 01-05	Multi-Canonical Methods and Lattice Field Theory G. KANWAR (University of Edinburgh), G. BONANNO (IFT UAM/CSIC), D. HACKETT (Fermilab), B. LUCINI (Swansea University), A. NADA (University of Turin), J. URBAN (MIT)
14-18	Next Generation Ab Initio Nuclear Theory C. BARBIER (Università di Milano), E. EPELBAUM (Ruhr Universität Bochum), R. FURNSTAHL (Ohio State University), S. PASTORE (Washington University in St. Louis)		

The ECT* is part of the Fondazione Bruno Kessler. The Centre is funded by the Autonomous Province of Trento, funding agencies of EU Member and Associated states, and by INFN-TIFPA and has the support of the Department of Physics of the University of Trento. The Director of ECT* is Prof. Ulfarsson van Kolck.
For information: staff@ectstaff.eu | www.ectstar.eu

2025 activities

(selected by Scientific Board)

22 workshops (23 weeks)

from February to December

+

Doctoral Training Program/TALENT School

in June/July (3 weeks)

Workshops in 2025

in-person attendance + remote participation



- *Key Reactions in Nuclear Astrophysics*
17-21 Feb | **41** + 1 | EURO-LABS, INFN, FRIB-TA, IReNA
- *Scale Setting: precision Lattice QCD for particle and nuclear physics*
03-07 Mar | **21** + 2 | U Regensburg
- *Holographic Perspectives on Chiral Transport and Spin Dynamics*
24-28 Mar | **33** + 4 | INFN, UA Madrid, CE Severo Ochoa
- *Mechanical Properties of Hadrons: structure, dynamics, visualization*
31 Mar - 4 Apr | **19** + 9 | INFN, UConn
- *Lepton Flavor Change in Nuclei*
14-18 Apr | **17** + 2 | EURO-LABS, INFN, FRIB-TA

Workshops in 2025

in-person attendance + remote participation



- *Quantum Science Generation 2025*
05-09 May | **65** + 1 | Province, FBK, UniTN, Q@TN, INFN/TIFPA, FRIB-TA + sponsors
- *Nonequilibrium Phenomena in Superfluid Systems: atomic nuclei, liquid helium, ultracold gases, and neutron stars*
12-16 May | **47** + 2 | EMMI, INFN, FRIB-TA
- *The Complex Structure of Strong Interactions in Euclidean and Minkowski Space*
19-23 May | **36** + 1 | INFN
- *Universality in Strongly Interacting Systems: from QCD to atoms*
09-13 June | **24** + 2 | INFN, FRIB-TA
- *Theory Service for the Low-Energy Nuclear Physics Community: a hands-on workshop*
07-09 July | EURO-LABS | **40** (expected)

Workshops in 2025

in-person attendance



- *Next-Generation Ab Initio Nuclear Theory*
14-18 July | **35** (expected)
- *Penetrating Probes of Hot High- μ_B Matter: theory meets experiments*
21-25 July | **40** (expected)
- *New Perspectives in the Charge-Radius Determination for Light Nuclei*
28 July – 1 Aug | **40** (expected)
- *Bridging Analytical and Numerical Methods for Quantum Field Theory*
25-29 Aug | **35** (expected)
- *Hamiltonian Lattice Gauge Theories: status, novel developments, and applications*
01-05 Sept | **45** (expected)

Workshops in 2025

in-person attendance



- *Analytical Structure of QCD and Lee-Yang Edge Singularity*
08-12 Sept | **25** (expected)
- *Attractors and Thermalization in Nuclear Collisions and Cold Atom Gases*
22-26 Sept | **40** (expected)
- *Superconducting Devices for Quantum Optics and Quantum Simulations*
06-09 Oct | **50** (expected)
- *Pan-American Few-Body Physics Boot Camp: fostering collaboration*
13-24 Oct | **30** (expected)
- *Neutron Capture Reactions for Astrophysical Processes*
03-07 Nov | **40** (expected)

Workshops in 2025

in-person attendance

- *Information and Statistics in Nuclear Experiment and Theory*
17-21 Nov | **45** (expected)
- *Multi-Canonical Methods and Lattice Field Theory*
01-05 Dec | **40** (expected)



All areas of nuclear physics and more



- hard, hot & dense QCD:
chiral transport, probes, singularities, thermalization, Hamiltonian methods, multicanonical methods
- hadronic physics:
scale setting, mechanical properties, Green's Functions, analytical/numerical methods
- nuclear structure and reactions:
theory tools for experiment, *ab initio* theory, charge radii, few-body physics
- nuclear astrophysics:
key reactions, neutron-capture reactions
- symmetries & fundamental interactions:
lepton-flavor violation
- related areas:
quantum science, universality, superfluids, superconducting devices, uncertainty quantification

QUANTUM SCIENCE GENERATION | QSG



02 May 2023 — 05 May 2023

Aula Renzo Leonardi - Villa Tambosi
 Str. delle Tabarelle, 286, 38123 Villazzano TN
 Villazzano

The QSG workshop will take place between the 2nd and 5th of May 2023, in Villa Tambosi, which is the ECT* Trento head quartier. It will be held this year for the first time and aims to become a recurrent, yearly, appointment gathering together worldwide experienced and early-stage researchers working in the field of quantum science and technology.

The purpose of the QSG workshop is twofold:

- o promoting and facilitating discussions between the students, postdocs, young researchers and experienced professors to enhance a flow of new ideas across different generations
- o offering seminars held by leading researchers in theoretical and experimental quantum physics as well as by young scientists.

To achieve that, the ingredients are the target audience, composed of local and international PhD students and postdocs (about 50-70), and the bottom-up organization, led by a group of PhD students and early postdocs.

The organizing committee's members: Valentina Amtrano, Anna Berti, Daniele Contessi, Alberto Nardin, Daniele De Bernardis and Alessio Baldazzi.

For this first edition of the QSG workshop, we would like to address the following topics:

- o Advances in quantum computing and quantum simulations
- o Computational methods for quantum technology
- o Development of new platforms for quantum technology.



64 participants

DTP 2025: *Quantum Computing for Nuclear Physics*

16 June -- 04 July 2025

Organizers:

- A. Bazavov (Michigan State U)
- Z. Davoudi (U Maryland)
- M. Hjorth-Jensen (U Oslo & MSU)
- R. Larose (MSU)
- D. Lee (MSU)
- A. Roggero (U Trento)

33 participants selected from 56 applications

Quantum Computing for Nuclear Physics

16 June – 4 July, 2025

ECT* Villa Tambosi, Villazzano



Aim of the School

This Nuclear Talent school aims at bringing together the efforts of nuclear many-body theorists, quantum information theorists, and mathematicians in order to present and discuss algorithms for studying nuclear systems using recent progress in quantum information theory.

Organizers and Lecturers

- Alexei Bazavov, Michigan State University
- Zorich Davoudi, University of Maryland
- Morten Hjorth-Jensen, Michigan State University and University of Oslo
- Ryan LaRose, Michigan State University
- Dean Lee, Michigan State University
- Alessandro Roggero, University of Trento

Student coordinators and Advisors

- Morten Hjorth-Jensen
- Alessandro Roggero

Application

Applications for the ECT* TALENT-DTP 2025 should be made electronically through the ECT* web page. It should include: a curriculum vitae, a 1-page description of academic and scientific achievements, a short letter expressing the applicant's personal motivation for participating in the School. In addition, a reference letter from the candidate's supervisor should be sent to Barbara Gazzo (gazzo@ectstar.eu) for the attention of the Director of ECT*. For further details see www.ectstar.eu

ECT* Director: Prof. Ubirajara van Kolck

The ECT* is part of the Fondazione Bruno Kessler. The Centre is funded by the Autonomous Province of Trento, funding agencies of EU Member and Associated states, and by INFN-TFRS and has the support of the Department of Physics of the University of Trento.
For the organization please contact: Susan Branson – ECT* Secretariat - Villa Tambosi - Strada della Tabarella 266 - 38123 Villazzano (Trento) - Italy | Tel: +39-0461 314710, E-mail: branson@ectstar.eu | www.ectstar.eu

CALL FOR 2026 PROJECT PROPOSALS

We welcome proposals for projects to take place at ECT* in 2026. Projects can be workshops or collaboration meetings. Other formats can be proposed and will be evaluated by the Board on a case-by-case basis. Decisions on approvals will be made at the Scientific Board meeting in June and **October 2025**. **Next deadline Sept 2025**

The topics of the planned activities should be in line with the main scientific interests of ECT*, i.e. nuclear physics in a broad sense. This involves nuclear structure and reaction dynamics, nuclear astrophysics, Quantum Chromodynamics and hadron physics, strongly interacting matter under extreme conditions, and symmetries and fundamental interactions. Topics can also be in related areas, such as particle physics, astroparticle physics and cosmology, methods of quantum field theory, condensed-matter physics, the physics of ultra-cold atomic gases, nuclear physics tools, machine learning, artificial intelligence, quantum computing, experimental techniques and methods.

The Scientific Board encourages the group of organizers to reflect diversity and combine established and early-career researchers.

Click [here](#) for a template of the form for proposals in Word, PDF and Latex format.

Please send the form no later than ~~May 26, 2025~~ by email to: driessen@ectstar.eu.

21 + 2 proposals received for workshops + DTP ~ last year

<https://www.ectstar.eu/activities/workshops/call-for-2026-project-proposals>

INFO

Workshops

[Guidelines for Workshop Organizers](#)

[Participant Information](#)

[Introductory Talks](#)

[Past Workshops](#)

Doctoral Training Program

[TALENT School](#)

[Seminars and Colloquia](#)

[Visiting Program](#)

[Virtual Platforms](#)

[ECT* Code of Conduct](#)

[Call for 2026 Project Proposals](#)

Funding agencies and supporting institutions:



Funding

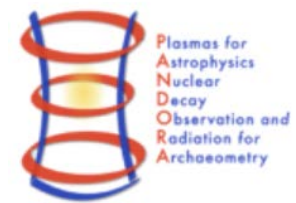
European network

Local support



Additional contributors:

Projects



ACE – ADVANCED COATINGS FOR ENHANCED CORROSION RESISTANCE OF STEEL IN LIQUID METAL ENERGY SYSTEMS



Funding remarks

Hopefully some good news next
NuPECC meeting!

Strong leverage from Trentino!!

Thank you for support, including LRP!!!



—

We are
awaiting
your visit!

