



ECT* 2018 Activities

Gilberto Colangelo



Selected Slides from the
Director's report for the
75. Meeting of the
Scientific Board of ECT*

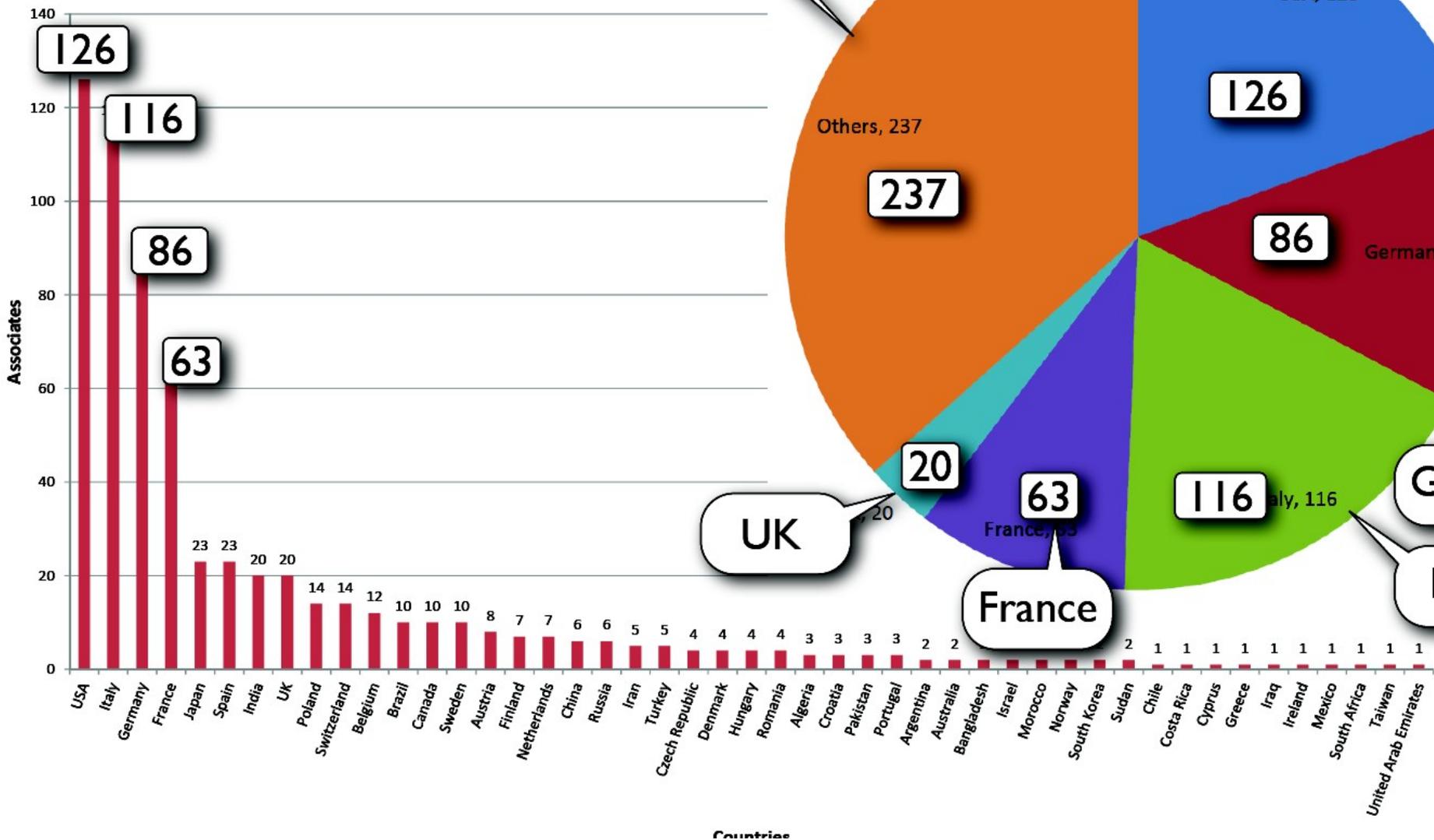
ECT* Director: Jochen Wambach



ECT* associates



644 in 2018



USA

USA, 126

126

Germany, 86

86

Germany

Italy

Italy, 116

France

France, 63

UK

UK, 20

Others, 237

237

Others

Countries



Scientific board

June 2018



Gert Aarts (chair)	Univ. Swansea
Omar Benhar	INFN Rome
Marek Lewitowicz (NuPECC)	GANIL, Caen
Nicole d'Hose	CEA, Saclay
Morten Hjorth-Jensen	Univ. Oslo & Michigan State Univ.
Ubirajara van Kolck	CNRS - INP Orsay
Sanjay Reddy	INT & Univ. Washington, Seattle
Dirk Rischke	Univ. Frankfurt
Marc Vanderhaeghen	Univ. Mainz

replacements:

Marcella Grasso	CNRS - INP Orsay
Martin Savage	INT & Univ. Washington, Seattle



Established in 1993 ...
... unique in **Europe**



this year: **25th anniversary!**

- “Bottom-up” realization supported by large community (ECT* **Associates** → International **Scientific Board**)
- Large influx of international visitors (~ 700 per year)
- Strong local support by the Autonomous Province of Trento (PAT) through the Fondazione Bruno Kessler (**FBK**)
- Multinational Memorandum of Understanding funding agencies of European countries + **EU** Projects
- Annual ECT* running budget: ~ 1 M€





Scientific activities at ECT*



- International **workshops** and **collaboration meetings** (typically around 20 events per year)
- **Doctoral training** programs and **Talent schools** (4-6 weeks of lectures for advanced PhD students)
- **Visiting scientist** program
- **Postdoctoral** program & **local research @ ECT*** (8-10 junior postdocs & senior researchers)

research topics

**QCD and Hadron physics, QCD matter,
Nuclear structure and reactions,
Neutrons stars, Many-body theory,
Computational physics**

- ~ 20-30 publications in high-impact journals

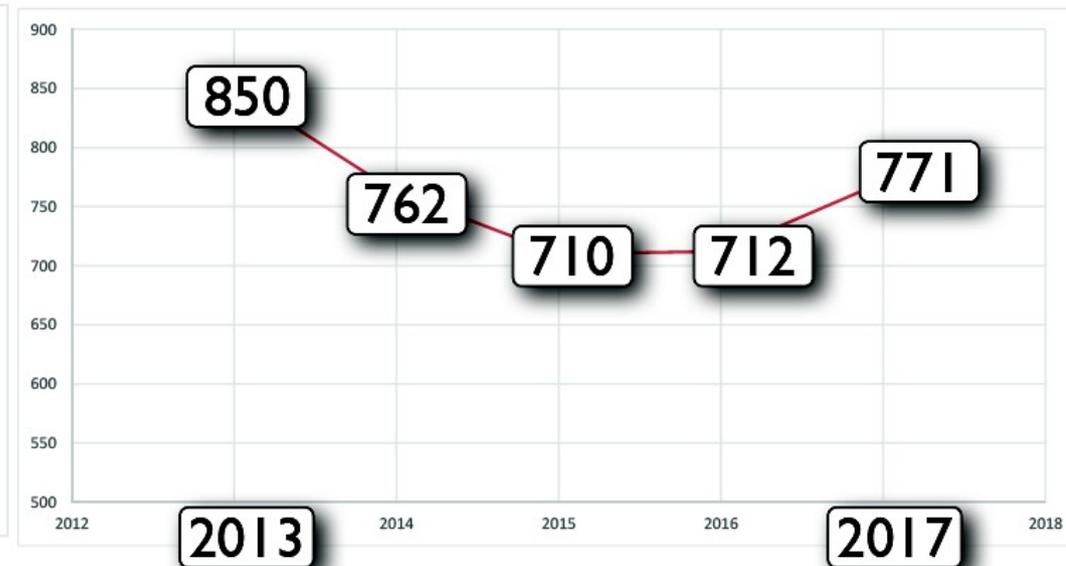
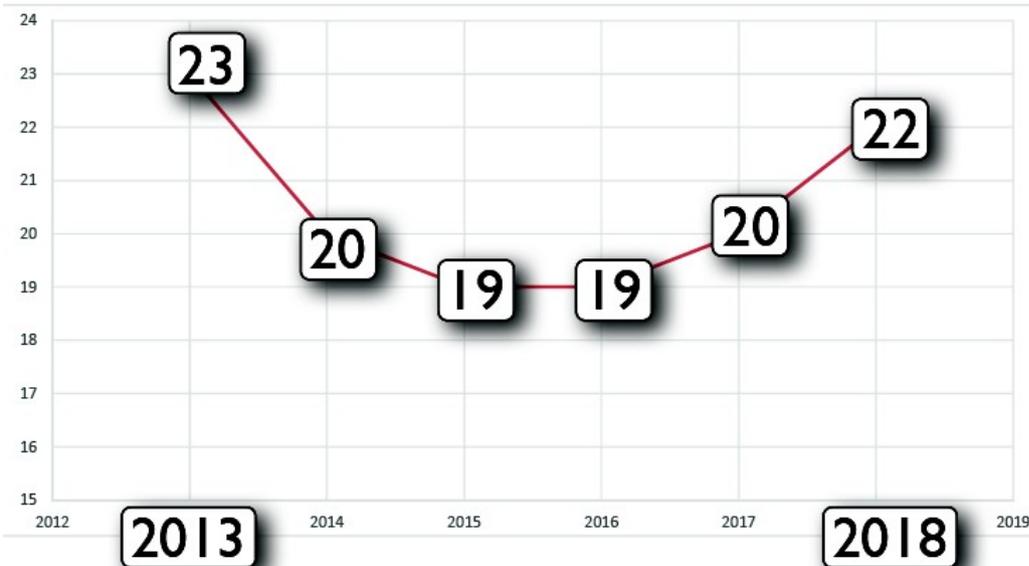


Statistics



workshops
at ECT*
2013-2018

visitors
at ECT*
2013-2017

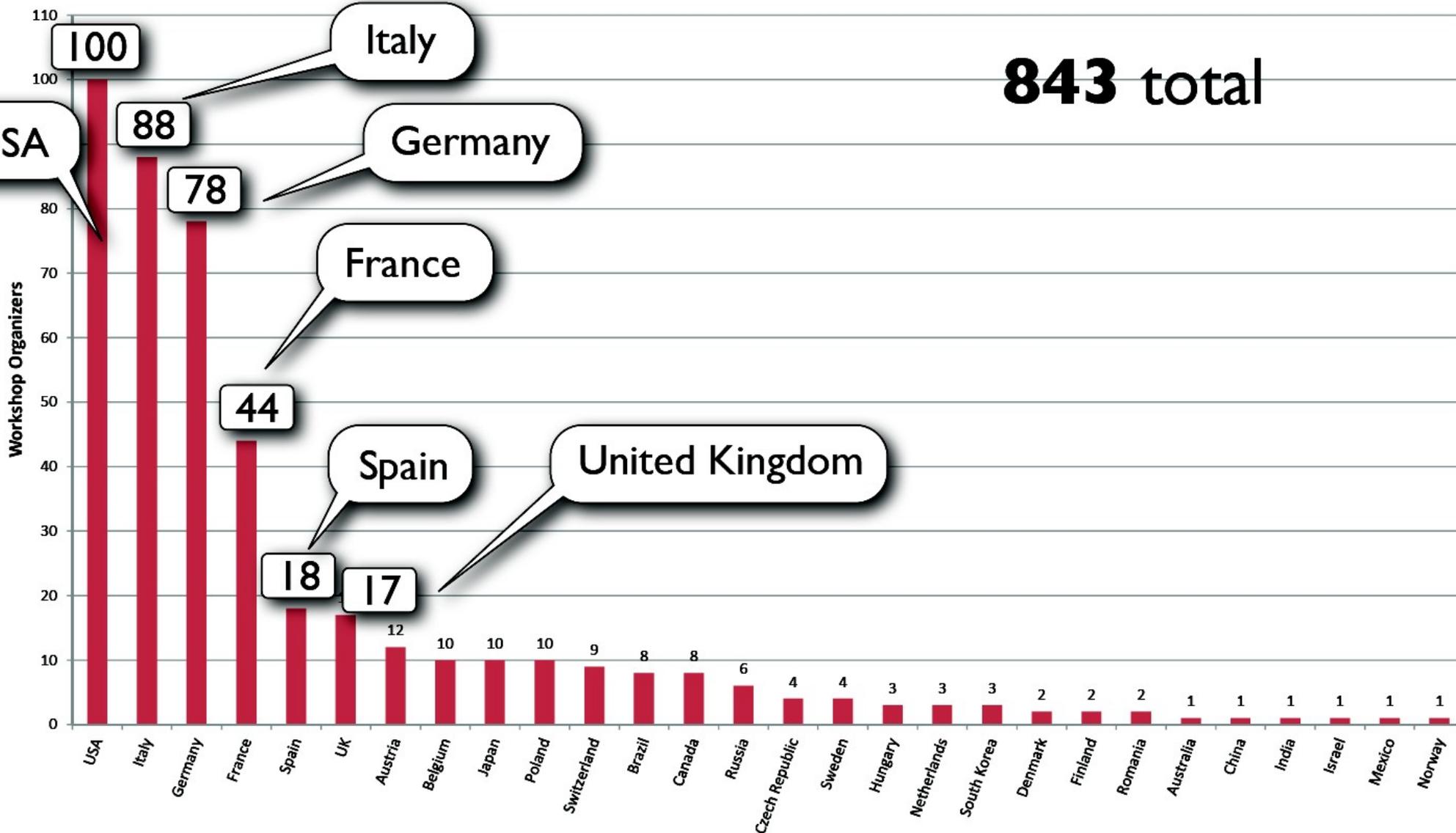




Statistics



workshop organizers per country



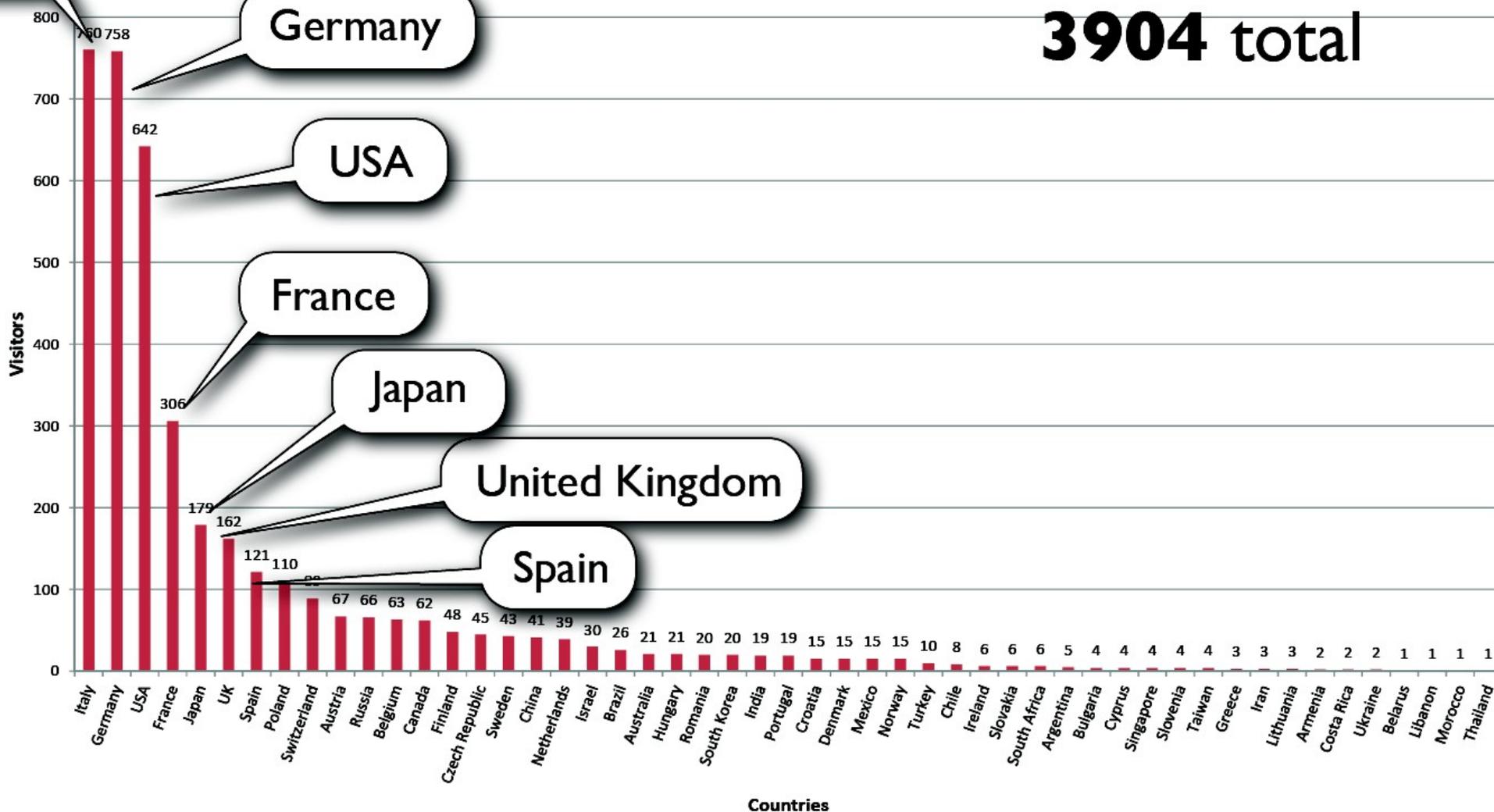


Statistics



ECT* visitors per country

3904 total





ECT* Scientific Events 2018



● **22 accepted workshops (out of 22 proposals)**

2018 PROGRAMME OF ACTIVITIES

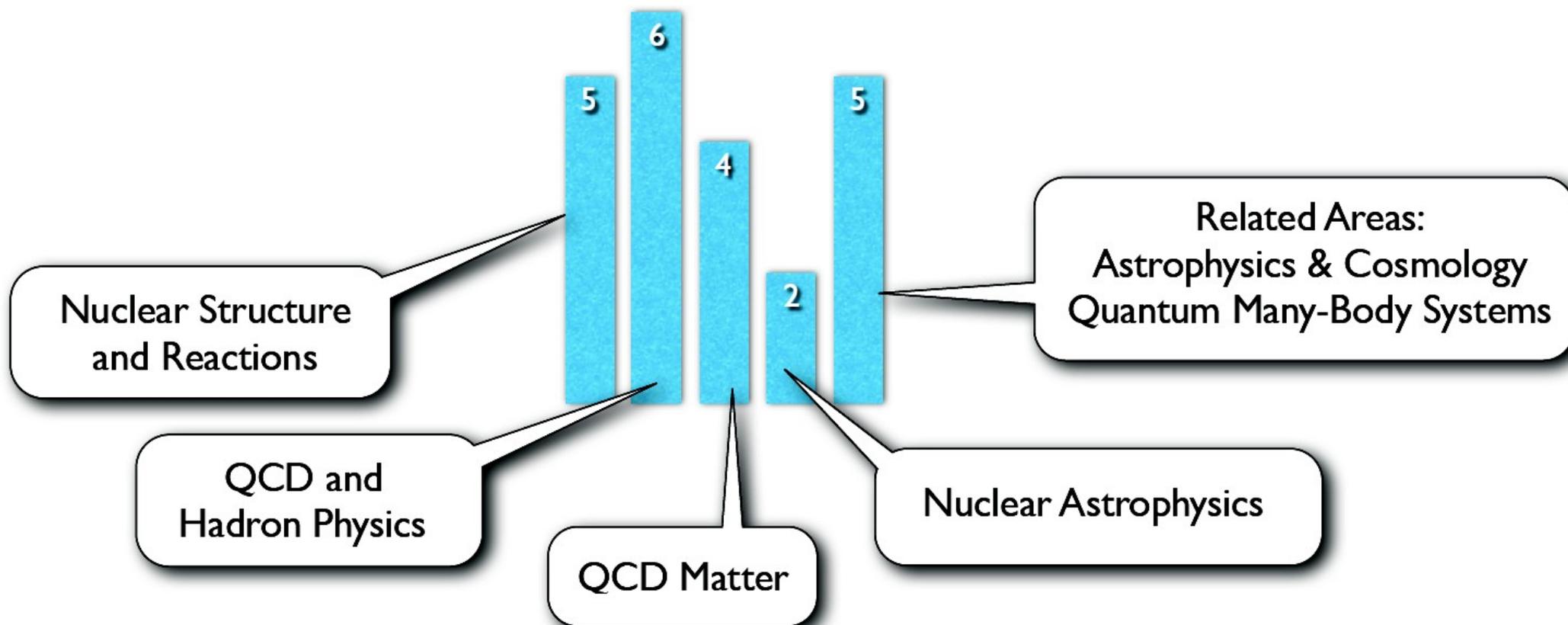
05-09 March	Recent Advances and Challenges in the Description of Nuclear Reactions at the Limit of Stability Organisers: P. Capol (<i>Université Libre de Bruxelles</i>), A. M. Moro (<i>University of Sevilla</i>), J. Casal (<i>BCT*, Trento</i>), J. A. Lay (<i>University of Sevilla</i>)	09-13 July	Modeling Neutrino-Nucleus Interactions Organisers: F. Sanchez (<i>Barcelona Institute of Science and Technology</i>), U. Mosel (<i>Giessen University</i>), M. Barbaro (<i>Turin University</i>), N. Jachowicz (<i>Ghent University</i>), D. Harris (<i>FNAL</i>)
26-30 March	Determination of the Absolute Electron (Anti)-Neutrino Mass Organisers: K. Valerius (<i>KIT, Karlsruhe</i>), L. Gastaldo (<i>Heidelberg University</i>)	16-20 July	Probing Exotic Structure of Short-lived Nuclei by Electron Scattering Organisers: T. Suda (<i>Tohoku University</i>), H. Simon (<i>GSI, Darmstadt</i>), T. Otruka (<i>RIKEN, Wako</i>), C. Barbieri (<i>University of Surrey</i>)
09-13 April	Spontaneous and Induced Fission of Very Heavy and Super-Heavy Nuclei Organisers: E. Vardaci (<i>University of Napoli</i>), N. Carjan (<i>JINR, Dubna, NIPNE-HH, Bucharest</i>), Y. Oganesian (<i>JINR, Dubna</i>)	03-07 September	Quantum Gravity meets Lattice QFT Organisers: A. Schäfer (<i>Regensburg University</i>), N. Bodasdorfer (<i>Regensburg University</i>), K. Giesel (<i>University of Erlangen</i>), M. Hanaida (<i>Kyoto University, Livermore, Stanford University</i>), M. Panero (<i>Turin University</i>), Y. Laffa (<i>Seattle University</i>)
16-20 April	Exposing Novel Quark and Gluon Effects in Nuclei Organisers: I. Cloët (<i>ANL, Lemont</i>), R. Dupré (<i>CNRS-IN2P3, Orsay</i>), S. Riordan (<i>ANL, Lemont</i>)	10-14 September	Mapping Parton Distribution Amplitudes and Functions Organisers: C. Mezrag (<i>INFN Roma</i>), G. Bali (<i>University of Regensburg</i>), C. Koppel (<i>JLab, Newport News</i>), C. Roberts (<i>ANL, Lemont</i>)
23-27 April	Exploring the Role of Electro-Weak Currents in Atomic Nuclei Organisers: S. Gandolfi (<i>LANL, Los Alamos</i>), R. F. Garcia Ruiz (<i>University of Manchester</i>), G. Hagan (<i>ORNL, University of Tennessee</i>), J. Holt (<i>TRIUMF, Vancouver</i>), A. Obertelli (<i>CEA, Paris-Saclay</i>)	17-21 September	Emergent Mass and its Consequences in the Standard Model Organisers: D. Binosi (<i>BCT*, Trento</i>), A. Aguilar (<i>University of Campinas</i>), J. Papavasiliou (<i>University of Valencia</i>), C. Roberts (<i>ANL, Lemont</i>)
07-11 May	Foundational Aspects of Relativistic Hydrodynamics Organisers: G. Moore (<i>TU Darmstadt</i>), M. Heller (<i>MPI for Gravitational Physics</i>), U. Heinz (<i>Ohio State University</i>)	01-05 October	Interdisciplinary Approach to QCD-like Composite Dark Matter Organisers: M. Chala (<i>University of Valencia, CSIC</i>), G. Nardini (<i>University of Bern</i>), M. Ramsey-Musolf (<i>University of Massachusetts Amherst, Kellogg Radiation Laboratory, CALTECH</i>), V. Sanz (<i>University of Sussex</i>), D. Schaich (<i>University of Bern</i>)
21-25 May	Probing QCD at the High Energy Frontier Organisers: G. Boef (<i>University of Jyväskylä</i>), N. Armesto (<i>University of Santiago de Compostela</i>), T. Lappi (<i>University of Jyväskylä</i>), C. Marquet (<i>École Polytechnique, Palaiseau</i>)	08-12 October	Discrete Symmetries in Particle, Nuclear and Atomic Physics and implications for our Universe Organisers: P. Moskal (<i>Jagiellonian University, Krakow</i>), D. Budnik (<i>University of Mainz, HIM, University of California, Berkeley</i>), C. Curceanu (<i>LNF-INFN, Frascati</i>), D. Kimball (<i>California State University</i>), A. Kups (<i>Uppsala University</i>)
28 May - 01 June	Gauge Topology 3: from Lattice to Colliders Organisers: M. D'Elia (<i>University of Pisa</i>), E. Sztaryk (<i>Stony Brook University</i>)	22-26 October	Observables of Hadronization and the QCD Phase Diagram in the Cross-over Domain Organisers: R. Stock (<i>Goethe University Frankfurt, FIAS</i>), M. Bleschke (<i>Goethe University Frankfurt, FIAS</i>), R. Belluard (<i>University of Houston</i>), F. Becattini (<i>University of Florence, INFN</i>), I. Steinheimer (<i>FIAS, Frankfurt</i>)
28 May - 22 June	Doctoral Training Programme: QCD Under Extreme Conditions Organisers: G. Azets (<i>Swansea University</i>), D. Rischke (<i>Goethe University Frankfurt</i>)	05-09 November	Indirect Methods in Nuclear Astrophysics Organisers: L. Trache (<i>IPIN-HH Bucharest</i>), A. Bonaccorso (<i>INFN Pisa</i>), C. Bertulani (<i>Texas A&M University-Commerce</i>), T. Motobayashi (<i>RIKEN, Wako</i>), Z. Fulop (<i>MTA ATOMKI, Debrecen</i>)
04-08 June	New Ideas in Constraining Nuclear Forces Organisers: J. Lynn (<i>TU Darmstadt</i>), I. Tews (<i>JINT, University of Washington</i>), J. Holt (<i>TRIUMF, Vancouver</i>), A. Ekström (<i>Chalmers University of Technology</i>)	26-30 November	Electromagnetic Radiation from Hot and Dense Hadronic Matter Organisers: G. David (<i>Stony Brook University</i>), C. Gale (<i>McGill University</i>)
18-22 June	Exploring Nuclear Physics with Ultracold Atoms Organisers: A. Gezelis (<i>University of Guelph</i>), T. Enss (<i>Heidelberg University</i>), J. Thywissen (<i>University of Toronto</i>)	19-21 December	The Spectroscopy Program at EIC and Future Accelerators Organisers: A. Pilloni (<i>JLab, Newport News</i>), M. Battaglini (<i>INFN Genova</i>), A. Szczepaniak (<i>Indiana University, JLab, Newport News</i>)
02-06 July	Nucleon Spin Structure at Low Q: A Hyperfine View Organisers: A. Deur (<i>JLab, Newport News</i>), A. Antognini (<i>ETH Zürich, Paul Scherrer Institute</i>), J. P. Cban (<i>JLab, Newport News</i>), V. Paschutka (<i>University of Mainz, PRISMA</i>), M. Vanderhaghen (<i>University of Mainz, PRISMA</i>)		



ECT* Scientific Events 2018



- **22 accepted workshops (out of 22 proposals)**





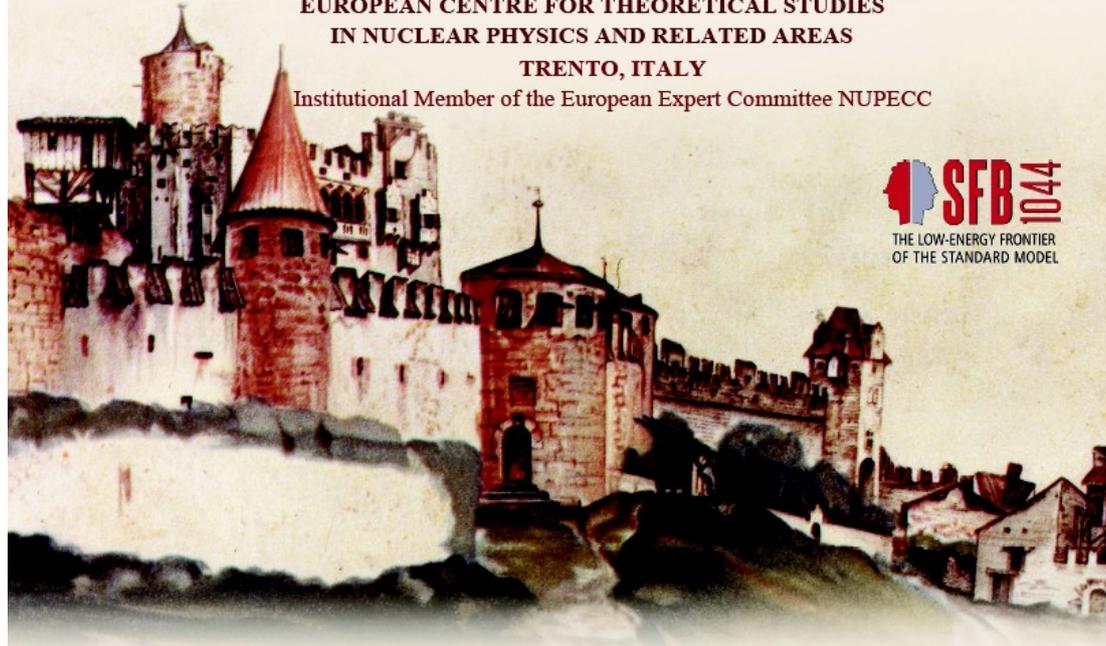
ECT*



EUROPEAN CENTRE FOR THEORETICAL STUDIES
IN NUCLEAR PHYSICS AND RELATED AREAS

TRENTO, ITALY

Institutional Member of the European Expert Committee NUPECC



Castello di Trento ("Trint"), watercolor 19.8 x 27.7, painted by A. Dürer on his way back from Venice (1495). British Museum,

Nucleon Spin Structure at Low Q: A Hyperfine View

Trento, July 2 - 6, 2018

Main Topics

- New measurements of spin structure functions, polarizabilities and form factors
- Sum rules, dispersion relations and empirical parametrizations
- Chiral perturbation theory of nucleon spin polarizabilities
- Progress in lattice QCD of the nucleon spin structure
- Hyperfine structure of muonic hydrogen

Confirmed Speakers

M.W. Ahmed (*Duke University, USA*), J. M. Alarcon (*JLab, USA*), C. Alexandrou (*University of Cyprus, Nicosia, Cyprus*),
 F. Hagelstein (*Universität Bern, Switzerland*), C. Carlson (*College of William and Mary, USA*), S. Kanda (*Riken, Japan*),
 S. Kuhn (*Old Dominion University, USA*), V. Lensky (*Universität Mainz, Germany*), P. Martel (*Universität Mainz, Germany*),
 H.W. Lin (*Michigan State University, USA*), K. Ottnad (*Universität Mainz, Germany*), E. Pace (*University of Rome Tor Vergata and INFN, Italy*),
 K. Pachucki (*University of Warsaw, Poland*), A. Pineda (*IFAE, Barcelona, Spain*), Jan Rijnveeën (*University of Bochum, Germany*),
 Nora Rijnveeën (*University of Bochum, Germany*), M. Ripani (*INFN Genoa, Italy*), S. Sconfiatti (*INFN Pavia, Italy*),
 K. Slifer (*University of New Hampshire, USA*), N. Sparveris (*Temple University, USA*),
 L. Tiator (*Universität Mainz, Germany*), A. Vacchi (*INFN Trieste, Italy*).

Organizers

A. Deur (*Thomas Jefferson National Accelerator Facility, USA*),
 A. Antognini (*ETH Zurich & PSI Switzerland*), J.P. Chen (*Thomas Jefferson National Accelerator Facility, USA*)
 V. Pascalutsa (*Universität Mainz, Germany*), M. Vanderhaeghen (*Universität Mainz, Germany*).

Director of the ECT*: Professor Jochen Wambach (ECT*)

The ECT* is sponsored by the "Fondazione Bruno Kessler" in collaboration with the "Assessorato alla Cultura" (Provincia Autonoma di Trento), funding agencies of EU Member and Associated States and has the support of the Department of Physics of the University of Trento.

For local organization please contact: Christian Fossi - ECT* Local Organizer - Villa Tambosi - Strada delle Tabarelle 286 - 38123 Villazano (I)
Tel.:(+39-0461) 314731 Fax:(+39-0461) 314750, E-mail: fossi@ectstar.eu visit <http://www.ectstar.eu>

A. Antognini's statement:

- The aim of the workshop was to review the latest experimental and theoretical developments on the low-Q proton spin structure and to discuss its interplay with the hyperfine splitting measurement in muonic hydrogen ongoing at the PSI.
- A white paper will be soon produced to define the advances on both theoretical and experimental sides needed to find the aimed resonance in the muonic atom and eventually for the interpretation of the measured transition.
- A very important contribution to this workshop on the theory side came from Franziska Hagelstein (Uni Bern).
- This workshop is the third one organised at the ECT* that is strongly supporting our group (PSI-ETH) activities. The previous two were related to the "proton radius puzzle".



Doctoral Training Programs & Schools

2013 - 2018



- 2013: Neutron-rich matter: (22 students)
Constraints from nuclear astrophysics
- 2014: Heavy-ion collisions: (35 students)
Exploring nuclear matter under extreme conditions
TALENT: Density functional theory and self-consistent methods (25 students)
- 2015: Computational nuclear physics: (17 students)
Hadrons, nuclei and dense matter
TALENT: Few-body methods and nuclear reactions (29 students)
- 2016: Nuclear, neutrino and relativistic astrophysics (14 students)
- 2017: Microscopic theories of nuclear structure, dynamics and electroweak currents (25 students)
TALENT: Theory of exploring nuclear structure experiments (31 students)
- 2018: QCD under extreme conditions (51 applications)



INSTITUTE for NUCLEAR THEORY

INTERNATIONAL COOPERATIONS



TECHNISCHE UNIVERSITÄT DARMSTADT



Japan Atomic Energy Agency
Sector of Nuclear Science Research
Advanced Science Research Center



National Astronomical Observatory of Japan

Japan



APCTP
Asia Pacific Center for Theoretical Physics

Korea

China



ITP

Chinese Academy of Sciences



Germany

CRC-TR 211
Strong-interaction matter under extreme conditions



Theory Alliance
FACILITY FOR RARE ISOTOPE BEAMS

USA



JINR Dubna

Russia

ENSAR²

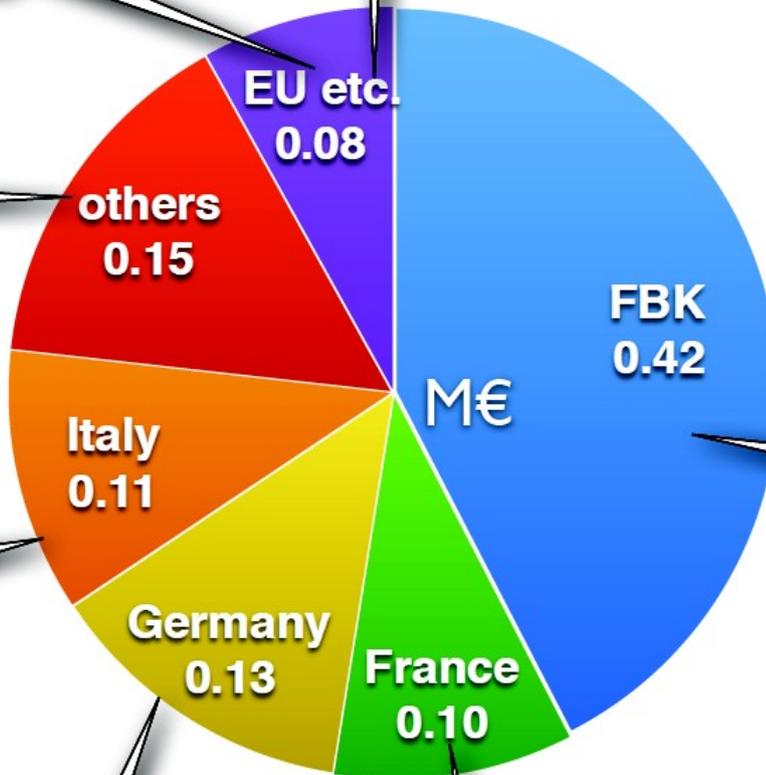


Self-supported activities

Annual Running Budget 2018
(tentative)

total: 0.97 M€

Belgium, Czech Republic, Finland, Hungary, the Netherlands, Poland, Romania, Russia, Switzerland, UK, USA + others



Bundesministerium für Bildung und Forschung



GOETHE UNIVERSITÄT FRANKFURT AM MAIN



IN2P3 Les deux infinis

