

ACTIVITY REPORT 2021

Presented to EPS Council, 4 June 2022



European Physical Society

more than ideas

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| President's Report | **Luc Bergé** |

INTRODUCTION FROM THE PRESIDENT

2021 has been a paradoxical year in many respects. A year of laborious exit from the covid 19 pandemic, oscillating between a partially regained freedom of movement and re-lockdowns. A year of in-depth transformations within the European Physical Society (EPS) too.

From the pandemic that seems to be moving away, we learnt about the exceptional qualities of online meetings that nowadays contribute by less transport expenses, a better preservation of our environment and a rapid way of exchange. For the EPS, after 2 years of presidency with Petra Rudolf, who advanced so much the cause of promoting diversity in our community, the time has come to reconsider the structures of our Society, its management system, its objectives, its partnerships and the events that make it a unique association for 42 National Physical Societies across Europe.

As announced when I took my term as president-elect in 2020, my objectives are - and will be - to enhance the visibility of the EPS, reinforce its cooperation with its Divisions, Groups, Committees and Member Societies, promote the young generation of physicists, open our activities to the industrial sector, and strengthen our actions toward Eastern and developing countries. This ambitious programme, like those that will further be initiated by my successors, needs to adapt the management modes of the EPS for better efficiency. This is why I set up working groups (WG) that provide the EPS Headquarters with think-tanks in which the members of the EPS Executive Committee can actively engage in the EPS's projects in osmosis with other stakeholders belonging to Member Societies or Cooperating Societies of the EPS.

WG1 - "Reaching Industry" - aims at developing the relationships of the EPS with the industrial sector. With its members, we augmented the pool of new Associate Members by 10%. WG2 laid the foundation of our future EPS Forum through the preparation of the "Rencontres Physique Entreprise Recherche" (RPER) organised by the French Physical Society in Paris on 17 September 2021. WG3 - "Physics for Development and Eastern States" - is dedicated to help physicists native from developing countries, to prepare actions for the International Year of Basic Sciences for Sustainable Development (IYBSSD) in 2022, and to reinforce European integration. Last but not least, WG4 - "Search for the next Secretary General" - aims at finding the successor of our current Secretary General, who has been an inspirational leader of the EPS for the past twenty years, but who will retire in Spring 2023.

The cornerstone of this new presidency will be the implementation of the EPS Forum as a regular in-person seminal event that will reinforce the visibility of our Society. Preceding the Council meeting, the EPS will organise, together with the EPS Member Societies, Divisions, Groups and Committees, a two-day meeting welcoming exhibitor stands, conferences, round tables, workshops and hands-on sessions. This event will become the main showcase of our Society and will bring together young researchers, renowned scientists, engineers and managers. The first edition of the EPS Forum will be held between the 2nd and 4th of June 2022 at the International Conference Center of Sorbonne University in Paris. On this occasion, 10 Member Societies, half of the EPS Divisions and Groups, and 10

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Associate Members accepted to form the programme and organisation committees gathering more than 70 active members. Prepared over a full year through monthly meetings, all these members have each brought an essential stone to build the Forum. I would like to express my sincere thanks for their efforts. Supported by 65 European research organisations, industrial groups, small and medium-sized enterprises, the EPS Forum will attract more than 500 participants from all over Europe and beyond, including a majority of PhD students, Post-Docs and early-career researchers who will be introduced to exciting research opportunities in R&D companies involved in the fields of energy and sustainability, accelerators, high-energy particle physics, nuclear physics, quantum technologies and photonics, machine learning, biophysics and condensed matter physics. Three winners of the Nobel Prize in Physics accepted to participate in person at this event. Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth, will open the Forum while Andrzej Jajszczyk, Vice-President of the European Research Council (ERC) for Physics, will give a lecture and participate in a round table on ERC and Widening Participation.

In 2022, The EPS is also committed with the events organised by the Steering committee of the International Year of Basic Sciences for Sustainable Development (IYBSSD), proclaimed for 2022 on 2 December 2021 by the United Nations (UN) General Assembly. The EPS has strongly supported this event for the past two years and will accompany it along the coming months enthusiastically. IYBSSD will officially start at UNESCO headquarters in Paris one month after the EPS Forum. Through the coming year, we shall support this International Year through the implementation of various projects. Among the latter, let us mention the Travel Award Fellowship Programme signed in November 2021 by the American Physical Society (APS), the International Center for Theoretical Physics (ICTP) and the EPS, which aims at helping early-career researchers working in developing countries

to return to their Alma Mater institution, or the 4th Physics Conference “Physics for the sustainable development” organised at Cape Verde in September 2022 by the Union of Physicists of Portuguese speaking countries.

An important highlight of 2021 was the meeting on “PHYSICS FOR SOCIETY: GRAND CHALLENGES IN THE HORIZON 2050”, held at the Magnus Haus in Berlin from 28 to 29 October 2021. It was jointly organised by the EPS and the German Physical Society (DPG) on the occasion of the DPG’s 175 year-Anniversary. Tirelessly chaired by Carlos Hidalgo – Thanks Carlos! – with the help of several session coordinators from many institutions, the programme addressed two key issues: physics as global human enterprise for understanding nature and physics developments to tackle major issues affecting the lives of citizens. Initiated in 2014, this long-term project will end with the publication of a book by IOPP, addressing the social dimension of science and the grand challenges in physics that will bring radical changes to developed societies and induce disruptive technologies by 2050.

Moreover, the Young Minds programme had a quite rich and successful year: In 2021 Young Minds (YM) established 6 new sections, 3 of them in countries were not represented within the EPS YM network yet (Luxembourg, Greece), for a total of 86 sections in 37 countries. Young Minds’ Chair Richard Zeltner has done a fantastic job with the Action Committee team in motivating all the local sections in their activities by offering original and innovative sessions during the 2021 Leadership meeting held on-line on 7 May 2021. I particularly thank the Young Minds for their strong participation to the organisation of the RPER, and to the first EPS Forum in Paris. The EPS also fully supports their webinar series “From PhD to CEO” jointly organised with the European office of Optica (formerly OSA), who invited six young researchers from Europe to share their own experiences when starting up a business. By attracting more than 500 registrations this series was a large success and demonstrated the demand by our

young generation of physicists to be more closely connected to the industry. This fits nicely the current EPS roadmap.

The EPS Historic Sites programme was also particularly successful this past year with the inauguration of 6 new historic sites (HS) thanks to the remarkable efficiency of the HS Committee headed by Karl Grandin: Sonnenborgh in Utrecht, Netherlands, the Ångström’s laboratory in Uppsala, Sweden, the whole City of Jena in Germany, the Musée Ampère near Lyon, France, the Cyclotron Hall, Leuven, Belgium and the Magnus-Haus in Berlin, Germany, are novel historic sites that will inspire others in the coming year. HS Awards commemorates places (laboratories, buildings, institutions, universities, towns, *etc.*) associated with an event, discovery, research or body of work, by one or more individuals, that made important contributions to physics. Since its creation in 2011, this programme has been meeting an ongoing success and it definitively contributes to increase the visibility of the EPS through that of the awardees.

The Divisions and Groups were very active in organising outstanding conferences and presenting 29 prizes and distinctions. About the conferences, CLEO/Europe EQEC 2021 was again very successful by attracting 1445 participants in an exclusively online format. This requested all the talents of the EPS Secretariat to maintain this meeting as the largest premier European conference in optics. CLEO/Europe-EQEC is an example of success for all the EPS Divisions that plan to organise world-leading conferences in their scientific field.

The EPS only exists through its hundreds of volunteers and the dedicated action of the secretariat, in Mulhouse as well as at its office in Brussels. I deeply thank all these committed people, physicists as well as the secretariat staff members, without whom the EPS would not exist.

2021 was a special year punctuated by a - hopefully final - fight against a disease that affected all our continents. 2022 will be that of the war led by Russia in Ukraine. And this war in Eastern Europe will affect us just as much.

Waiting for a better future, I wish you a pleasant reading of the present report. ■

Honorary Secretary's Report | **Ian Bearden and David Lee** |

EXECUTIVE COMMITTEE ACTIVITIES 2020

The Executive Committee of the European Physical Society (EPS) develops the EPS policy, discusses ongoing activities, financial matters, future plans, and puts in practice effective strategies to improve the visibility and impact of the EPS.

Under the Presidency of L. Bergé, the Executive Committee plans to meet in person two times per year, and to meet video conference two times by video conference. Other meeting can be organized as necessary. The EPS President, elected by the EPS Council, chairs the Executive Committee meetings.

Over the period 2021-2022, the EPS Executive Committee met 6 times: 21 February 2021, 4 April 2021, 7 May 2021, 19 November 2021, 26 January 2022 and 13 April 2022. Due to travel restrictions as a result to the COVID 19 pandemic, all meetings were held by video conference.

In 2021 the Executive Committee continued to monitor the impact of COVID 19 pandemic on EPS activities. Notably, the staff at the secretariat worked mainly from home

until June 2021. The EPS Staff has begun coming back to work at the Secretariat progressively since then, and is currently working 2 days from home. Conferences organised by the EPS and its Divisions and Groups were held mainly on-line, with the exception of 2 hybrid events: the 3rd EPS conference “Statistical Physics of Complex Systems” organised by the EPS Statistical and Non-linear Physics Division in September 2021, and the “Applied Nuclear Physics Conference 2021”, organised by the EPS Nuclear Physics Division, also in September 2021.

The Executive Committee prepared the regular EPS Council meeting, which took place on 8 April 2021. It also convened an Extraordinary Council meeting on 26 January 2022, to appoint In Extenso as the new firm of Statutory Auditors and to approve the one-year extension of the term of the current Executive Committee members in order to modernise the EPS constitution and by-laws.

L. Bergé has increased the engagement of the Members of the EPS Executive

Committee, Secretariat and representatives of EPS Divisions and Groups by introducing 4 working groups to implement the different aspects of his programme: WG1: Reaching Industry, with new EPS Associate Members & web platform, WG2: EPS and the RPER, WG3: EPS and Physics for Development and European Integration, WG4: Recruitment of the next Secretary General, plus a working group to organise the EPS Forum and Council. A fifth working group was created following the Extraordinary Council meeting in January 2022 to modernise the EPS Constitution and structures (see above). Through the working groups, he is in regular contact with most members of the Executive Committee (who are also members of WGs) and with EPS Divisions and Groups.

Enhancing the visibility and the influence of the EPS in the European instances is a priority item for the Executive Committee. The EPS Point of Presence in Brussels, led by E. Sanchez, was asked to develop high

EX. COM. MEMBERS	DIVISION AND GROUP, COMMITTEES, PUBLICATIONS	MEMBER SOCIETY
Bearden, Ian	Physics Education, Energy Group, EuroPhysicsNews	Denmark, Finland, Iceland, Norway, Sweden
van der Beek, Kees	Statistical non Linear Physics Division, Division of Physics in Life Sciences, Condensed Matter Division, Equal Opportunities	Albania, Croatia, France, Macedonia, North Montenegro, Serbia,
Bergé, Luc	President	
Caruso, Roberta	Quantum Electronics and Optics Division, Atomic Molecular and Optical Physics Division, Young Minds, European Physics Journal	Armenia, Georgia, Moldava
Fantz, Ursel	Computational Physics Group, History of Physics Group, Plasma Physics Division, Historic Sites	Austria, Germany
Nappi, Eugenio	High Energy and Particle Physics Division Accelerators Group	Czech Republic, Hungary, Italy, Slovakia
Palmer, Stuart	Technology and Innovation Group	United Kingdom
Peña, Teresa	Nuclear Physics Division, Conference Committee, e-EPS	Portugal, Spain
Rabinovici, Eliezer	Physics for Development Group	Estonia, Israel, Latvia, Lithuania, Poland
Rudolf, Petra	Vice-President	
Sakellariadou, Mairi	Joint European Solar Physics Division, Gravitational Physics Division	Bulgaria, Cyprus, Greece, Romania, Turkey
Schopper, Andreas	Environmental Physics Division, Forum Physics and Society	Belgium, Liechtenstein, Luxembourg, The Netherlands Switzerland
Zwicky, Gertrud	Distinctions and Awards Committee, European Integration	Belarus, Russia, Ukraine

level contacts to EU officials and with other learned societies. Notably the EPS was active in writing to Members of the European Parliament to defend the research and innovation budget in the Horizon Europe programme.

The Executive Committee continued work on the framing document on Grand Challenges and on the many contributions of Physics to Society, written by physicists addressing people outside our community:

policy makers, stakeholders, and general public. The project is associated to the activity of the Forum Physics & Society (FPS). The purpose, structure and content of the document was defined and topics and authors were identified and approached.

At its meetings, the Executive Committee invites representatives of national physical societies, representatives from other learned societies, policy makers, and Chairs of Divisions and Groups.

The members of the Executive Committee play an important role in establishing and maintaining contacts to Member Societies and Divisions and Groups. Every Executive Committee member is the direct contact person for a small number of Member Societies. The same principle has been introduced to establish privileged contacts with the Divisions as shown in the table. ■

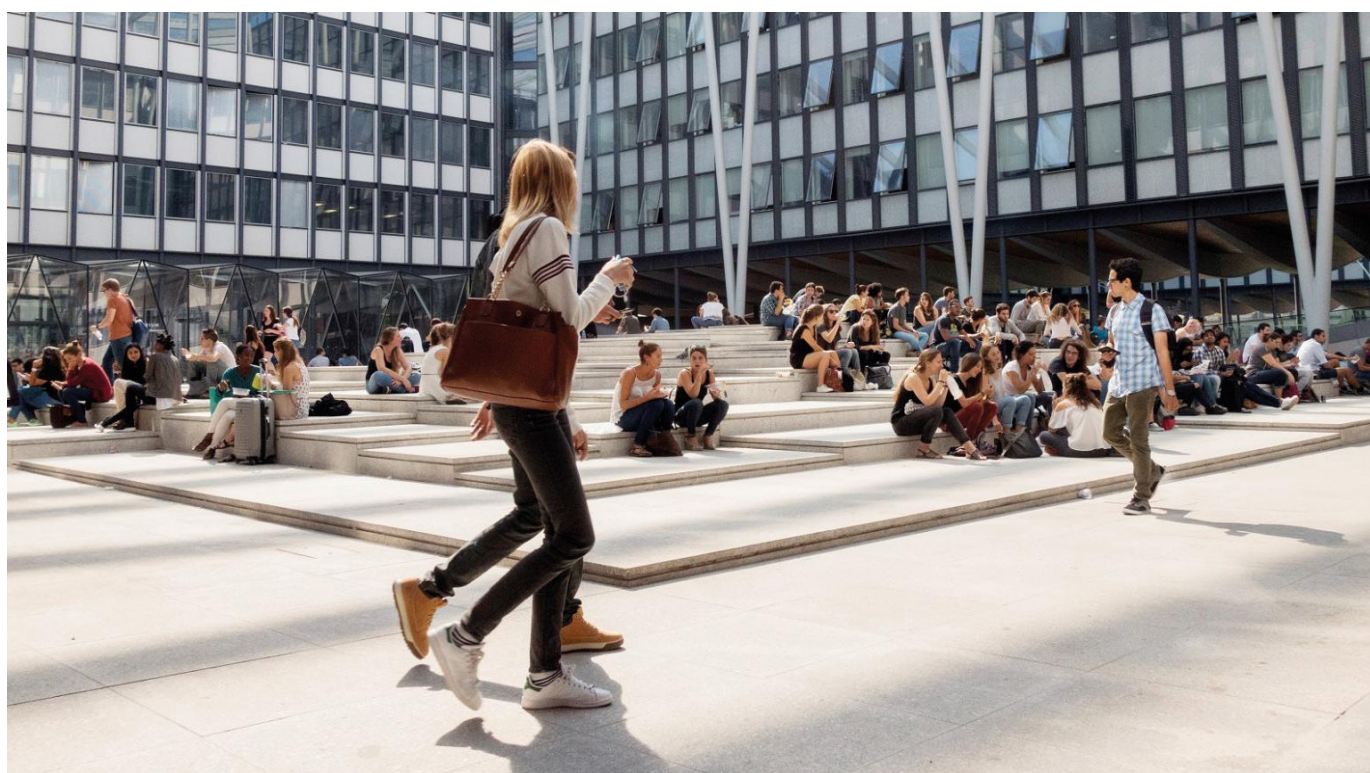
HIGHLIGHTS 2021

EPS PARTICIPATION AT THE “RENCONTRES PHYSIQUE ENTREPRISE RECHERCHE - RPER”

The meeting “Rencontres Physique Education Recherche” was organised by the French Physical Society, the EPS and the ESPCI - Paris Sorbonne Université on 16-17 September 2021 in Paris (FR) on the Pierre et Marie Curie Campus of Sorbonne Universités. This second edition of the RPER was attended by around 400 people, with 300 students and Post-docs. The programme consisted of plenary

multi-disciplinary conferences; round tables; interactive workshops; an entrepreneurs’ forum; and a meeting place for companies and entrepreneurs to meet with young researchers. The EPS contributed significantly to the programme and organised a plenary talk by G. Kalbe from the European Commission, a conference talk by P. Senellart from Quandela (a quantum technologies start up), a round table on

“The rise of quantum industry”, led by E. Sanchez, a mini-forum on entrepreneurship, led by A. Groen (Groningen, NL), and a workshop on a quantum demonstrator by the EPS Technology and Innovation Group and S. Kubsy. EPS personnel also staffed a booth at the exhibit. The EPS contribution was piloted by Working Group 2, whose members were R. Caruso, D. Pesina, Enrique, J-A. Raoux (SFP), and L. Bergé. ■



THE YOUNG MINDS LEADERSHIP MEETING

The Young Minds (YM) programme of the European Physical Society (EPS) was initiated 10 years ago, with the goal to connect young students and researchers all over Europe and to support their professional and personal growth. The programme now comprises more than 60 sections active in over 30 countries. A highlight of the annual agenda of YM is the leadership meeting, which is hosted by a section and brings delegates from all over the YM network together. Due to the COVID 19 pandemic, the 2021 Leadership meeting held on-line on 7 May 2021.

The meeting attracted delegates from 55 sections from 30 sections and 21 countries. The meeting was divided into two sessions. The first session focused on professional development, and the second session was devoted to stimulating exchange and

networking among the attendees. The first session began with a presentation by the EPS YM programme manager Ophélie Fornari who gave a brief overview of the history of EPS YM, and described the new functionalities for section management on the EPS website to the participants. Richard Zeltner, EPS YM Action Committee Chair, then gave an overview of activities in 2020 and 2021, highlighting the numerous section activities that were carried out despite the ongoing pandemic. Luc Bergé, the EPS president, presented the agenda for his presidency and his plan to establish the EPS Forum to the YM community. Since a majority of young physicists eventually pursue a career in the private industry sector, his explanations on his plans to strengthen the relationships between EPS and the industry were followed with great interest. The first

sessions concluded with a panel discussion on career advice for young scientists. The panelists were Gabrielle Thomas, Lucia Santamaria, Luc Bergé, Chang Kee Jung and Petra Rudolf.

After the panel discussion the meeting transitioned to Gather Town, where the participants could engage in more informal and direct activities. During a speed networking event the delegates had the opportunity to refresh old connections and to create new ones within the YM community. Considering that the last direct exchange between the Action Committee and the sections took place during the leadership meeting 2019 it was also a great opportunity for the committee to get to know the new section officers in the established sections and to establish a relationship with the newly created sections. ■

EPS GRAND CHALLENGES ON THE HORIZON 2050

The meeting on “PHYSICS FOR SOCIETY: GRAND CHALLENGES IN THE HORIZON 2050” was held at the Magnus Haus in Berlin from 28 to 29 October 2021. It was jointly organised by the European Physical Society (EPS) and the German Physical Society (DPG) on the occasion of the DPG’s 175 year- Anniversary. The conference, with hybrid format, attracted nearly 300 people (on-line participation) as well as nearly 30 invited speakers (on-site) from different international institutions. The DPG hosts provided an excellent and unique atmosphere for the meeting.

The scientific committee, chaired by Carlos Hidalgo and session coordinators from different EU institutions (Ralph Assmann, Felicia Barbato, Christian Beck, Kees van der Beek, Giulio Cerullo, Luisa Cifarelli, Felix Ritort, Mairi Sakellariadou, Bart van Tiggelen, Claudia-Elisabeth Wulz), played a key role in the development of the programme. This addressed two major pillars: a) Physics as global human enterprise for understanding nature and b) Physics developments to tackle major issues affecting the lives of citizens.

The meeting offered plenary lectures covering a wide range of topics: Physics bridging the infinities, the smallest scales and the largest scales; Matter and waves; Physics for understanding life: searching for life in the universe and intelligence and life; Physics for health, accelerators and bionics & robotics; Physics for environment and sustainable development: earth, climate and energy; Physics for secure and efficient societies: large scale complex socio-technical systems information and communication. All these topics are widely recognised today as the most important global challenges in physics. The meeting also offered two round table discussions, chaired by Christophe Rossel, Luc van Dyck and Rüdiger Voss, addressing issues such as: Curiosity-driven research as a road to new paradigms and true innovation; Technology development: power gains and vulnerability; Education and research in an interdisciplinary environment; Open communication and responsible citizens; Science and ethics.

The objective of the meeting was to assemble contributions with depth and high quality from the entire physics community.

Interdisciplinarity allows interconnections between many areas of knowledge (involving physics, mathematics, biology, chemistry) in such a way that the whole body of connected ideas might suddenly expand due to small advances within the islands of specialised knowledge. In this meeting, we have looked at all these aspects to explore what makes us, human beings, really unique in nature: our ability to imagine and shape the future by making use of the scientific method.

The meeting provided a glimpse of the on-going “Grand Challenges in the Horizon 2050” EPS project addressing world’s physics agenda to solve in science and technology. The resulting book to be published by IOPP, under the umbrella of the EPS, is designed to address the social dimension of science and the grand challenges in Physics that will bring radical changes to developed societies, to raise standards of living at the global scale and to provide basic understanding of nature on the Horizon 2050. This action is under development within the framework of the EPS Forum Physics and Society activities in the period 2019 – 2022. ■

| EPS Honorary Treasurer's Report | **Stuart Palmer** |
FINANCIAL REPORT 2021

The European Physical Society is currently revising its accounts to bring them into conformity with the new chart of accounts adopted by the French government in 2021. The figures presented below are estimates, reviewed by the EPS statutory auditors that fairly reflect the profit and loss statement for the year 2021.

The core income for 2021 was Euro **1,168,930**, 55% from Members, 26% from publication activities and 19% from conferences and other activities. The expenditure for 2021 was Euro 926,169 for administration and governance, and 59% for activities. The outcome for the year for core activities is an excess of Euro **242,761**.

Income in 2021 was 5% more than budgeted, coming mainly from increased income from Conference Services, due to the organisation of the CLEO/Europe-EQEC Conference. Administrative expenditure in 2021 was substantially higher than the budget (€380,487 v €351,912), due principally to costs related to recruitment of new personnel at the Secretariat. The activity expenditure was also significantly under budget (Euro 542,461 v Euro 712,622). Activities were still difficult to organise due the ongoing COVID 19 pandemic. It is worthy of note however that it was not necessary to use any of the carry-forward from 2020 to balance the budget in 2021. Therefore, the Euro 163,542 that was initially foreseen to balance the 2021 budget will be placed into general EPS reserves.

Corrections to the EPS Accounts 2021

The annual accounts were prepared in conformity with the regulations ANC n°2018-06 of 5 décembre 2018 for the first time in 2021, comparing the 2021 accounts with 2020 and 2019.

For the accounts 2021, it is necessary for the EPS Council to decide on the following corrections that will have an impact on the structure of the equity of the Association. As of 31 December 2020, Other Association Equity with the right to recovery was 883 448,32 euros. It comprises contributions, donations, dedicated reserves with the right to recovery, as well as amounts that should have been included in the profit and loss statement for a net amount of 2 238.68 euros.

In the Balance Sheet as of 1 January 2021, the amount that appears in the line "Other Association Equity with the right to recovery" is 883 448.32. It has been apportioned as follows:

- 880 226.25 euros as contributions ;
- -2 238.68 euros as a charge in the accounts for 2021 ;
- 5 460.75 euros specific reserves with the right to recovery

The amount of 880 226.25 euros will be apportioned into the appropriate sub-accounts of the different Divisions, Groups and other contributions. These sub-accounts will be grouped under 2 main headings in the Liabilities section of the Balance Sheet:

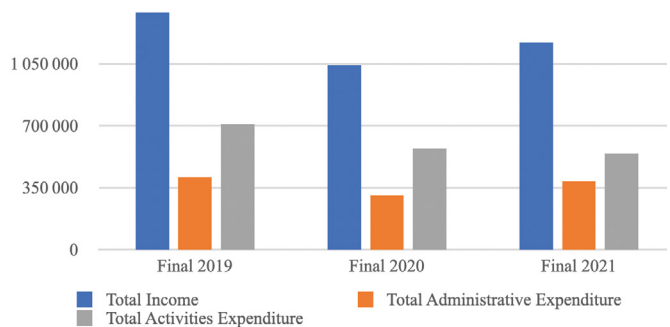
- Association equity reserve for association projects for an amount of 749 212.84 euros ;
- Association equity without right of recovery- donations for an amount of 131 013.41 euros.

Each year, Council will be asked to approve the distribution of income and expenses for concerned Divisions and Groups.

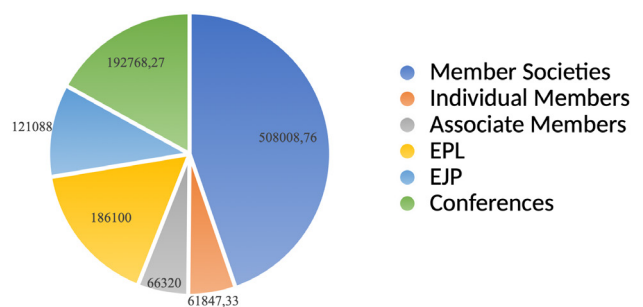
In 2021, the total income generated by Divisions and Groups was Euro 42,452 and total expense generated by Divisions and Groups was Euro 44,128 The difference of Euro 1,676. Council will be asked to allocate this income and expense to the appropriate Division or Group.

The outcome for the year for after these adjustments is an excess of Euro 241,085.

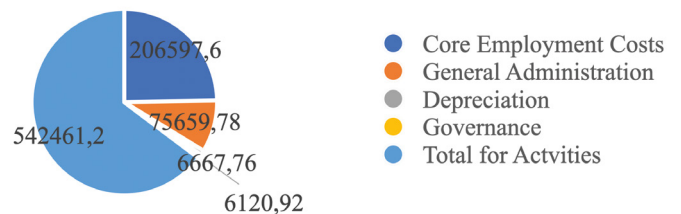
Income and Expenditure 2019 - 2021 (in Euro)



Income 2021 (in Euro)



Expenditure 2021 (in Euro)



SECRETARIAT

The Secretariat of the European Physical Society is headquartered on the campus of the Université de Haute Alsace, in Mulhouse, France. Staffing remained stable in 2021, 9.9 FTE in 3 main areas: Core Secretariat (5.9); Conference Services (1), and the EPL Editorial Office (3).

The Core Secretariat provides administrative services to the EPS, including accounting, graphic design, and information technology. Among the main tasks are the preparation of Europhysics News and e-EPS, website maintenance and design, financial control, invoicing *etc.* The Secretariat also supports Divisions and Groups, and the activities of EPS Committees, and the Executive Committee. European relations, relations with other societies, communications, outreach, policy monitoring and EPS involvement in EU projects are also part of activities of the Core Secretariat.

The Conference Services department provides a full range of services for

conferences organised by EPS Divisions and Groups. These include committee management, web site design and maintenance, communication, onsite logistics, online paper submission and maintenance, budgeting, *etc.* Much work was undertaken to develop the capacity at the Secretariat to organise virtual Meetings. Notably, the EPS Conference service department ran CLEO/Europe - EQEC as a fully on-line event in June 2021. This conference was a real challenge for the EPS Conference Services department. There were 1560 contributed submissions submitted from 52 countries. After review, 1400 presentations were accepted, including 917 oral presentations, and 413 posters. Also included in the programme were 12 short courses. The conference attracted 1445 registered participants. The conference ran from the 21 to 24 June 2021 and had up to 12 parallel sessions and 9 poster sessions.

EPS headquarters in Mulhouse also houses the EPL editorial office, with F. Burr as Staff Editor who manages 2 editorial assistants. In 2021, the EPS Editorial Office handled 1,063 manuscripts. During the last semester of 2020, and for the first quarter of 2021, the staff at the Editorial office in Mulhouse worked very hard on transforming the editorial management software to ScholarOne, which allows on-line publication as soon as a manuscript is accepted. Moreover, EPL has moved away from the PACS System which was used for manuscript assignments, reviewer search, and in the publication of articles. New Section heading are now being used that are more adapted to the strengths and desired editorial development of EPL. Despite these significant changes in working methods, and notwithstanding the perturbations related to the COVID 19 pandemic, EPS Editorial Office has managed to maintain fast processing times from receipt to acceptance of around 80 days. ■

▼ EPS staff 2021 - Top: F. Burr, S. Loskill, D. Lee, G. Gunaratnam - Middle: E. Sánchez, X. de Araujo, P. Helfenstein, A. Ouarab - Bottom: S. Fila, O. Fornari, K. Desse., O. Alaiwan



REPORTS BY EPS ACTION COMMITTEES

EPS HISTORIC SITES

Chair: Karl Grandin

Despite the continued pandemic conditions during most parts of the year 5 historic sites have been inaugurated during 2021. Still some planned inaugurations have been postponed due to the pandemic, and organisers hope to be able to organise the inaugurations once the situation permits.

EPS Historic Sites declared in 2021:

- 7 April 2021: Sonnenborgh, Utrecht, Netherlands
- 6 August 2021: Philologicum, Anders Ångström's laboratory, Uppsala Sweden
- 7 June 2021 City of Jena, Jena Germany
- 6 October: Musée Ampère, Lyon, France
- 12 October 2021: Cyclotron Hall, Leuven, Belgium
- 15 October 2021: Magnus-Haus Berlin, Germany

One example of the inaugurations in 2021 took place in connection with a regional Physics Conference – the Nordic Physics Days in Uppsala Sweden in August 2021. It celebrated the work by Anders Jonas Ångström in the mid-19th century and saw support from both the city and the university as well as by the EPS vice president, Petra Rudolf, who together with a young descendant of Ångström's inaugurated the memorial plaque at the old physics department. Movies from the event can be found at:

<https://www.nordicphysicsdays2021.se/inauguration-of-eps-historical-site-dedicated-to-anders-jonas-angstrom/>

Until December 2021, 99 proposals of Historic Sites have been received, either spontaneous or channeled through National Member Societies. Proposals can be made at any time from the EPS web site (link below). Of these proposals, 61 EPS Historic Sites have been inaugurated in 21 different countries at the end of 2021.

1. The Goldfish Fountain of the Physics Institute of Panisperna Street – *Centro Fermi*, Rome, Italy, 20 April 2012
2. Laboratory “Les Cosmiques”, Col du Midi, Chamonix, France, 23 July 2012
3. Hoza 69, Warsaw, Poland, 10 January 2013
4. The Study of Bruno Pontecorvo – JINR, Dubna, Russia, 22 February 2013
5. The Hill of Arcetri, Florence, Italy, 17 May 2013
6. The Villa Griffone in Pontecchio Marconi, Bologna, Italy, 26 May 2013
7. The Observatory of Tycho Brahe, Hven Island, Landskrona, Sweden, 11 September 2013
8. The LAL-LURE Accelerator Complex, Orsay, Paris, France, 13 September 2013
9. PTB, Formerly PTR, The National Metrology Institute, Berlin, Germany, 8 October 2013
10. The Cathedral, Kamien Pomorski, Poland, 11 October 2013
11. The Neutrino Experiment at MTA Atomki, Debrecen, Hungary, 25 October 2013
12. The Niels Bohr Institute, Copenhagen, Denmark, 3 December 2013
13. The AdA Storage Ring at the INFN Frascati National Laboratory, Frascati, Rome, Italy, 5 December 2013
14. The European Birthplace of the Atomic Timekeeping – NPL, Teddington, UK, 31 January 2014
15. The Blackett Laboratory, London, UK, 30 April 2014
16. The Fabra Observatory, Barcelona, Spain, 9 May 2014
17. The Study of Georgi Nadjakov, Sofia, Bulgaria, 23 May 2014
18. The Synchro-Cyclotron, SC – CERN, Geneva, Switzerland, 19 June 2014
19. The Kamerlingh Onnes Laboratory and Lorentz Institute, Leiden, The Netherlands, 9 February 2015
20. The Fazor Lutheran Secondary School, Budapest, Hungary, 23 April 2015
21. The Ludwig Maximilian University, Munich, Germany, 6 May 2015
22. The Students Residence (*Residencia de Estudiantes*), Madrid, Spain, 13 May 2015
23. The Mount Vesuvius Observatory, Herculaneum, Naples, Italy, 23 May 2015
24. The Institute for Radium Research, Vienna, Austria, 28 May 2015
25. The Einstein House, Bern, Switzerland, as **Joint APS-EPS Historic Site**, 14 September 2015
26. The Hotel Metropole, Brussels, Belgium, 24 October 2015



▲ The plaque of the EPS Historic Site celebrating Anders Jonas Ångström in Uppsala, Sweden was unveiled by the EPS Vice President Petra Rudolf (right end) together with Rasmus Nordin (left of the plaque), a young descendant of Anders Jonas Ångström - Image credit: Camilla Thulin.

27. The Ernst Mach Physics Institute, Prague, Czech Republic, 18 February 2016
 28. The Cabinet of Physics of the University of Coimbra, Coimbra, Portugal, 11 March 2016
 29. The Former Physical Institute of the University of Würzburg, Würzburg, Germany, 7 June 2016
 30. The “Piersanti Mattarella Tower of Thought” of the Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy, 21 August 2016
 31. The Uddmanska House, Kungälv, Sweden, 29 October 2016
 32. The Institute for Advanced Study, Princeton, NJ, USA, as **Joint APS-EPS Historic Site**, 9 November 2016
 33. “Les Bastions” of the University of Geneva, Geneva, Switzerland, 29 March 2017
 34. H.H. Wills Physics Laboratory (Royal Fort) of the University of Bristol, Bristol, UK, 13 September 2017
 35. IBM Research Laboratory, Rüschlikon, Zürich, Switzerland, 26 September 2017
 36. The Philips NatLab, Eindhoven, The Netherlands, 5 October 2017
 37. The Curie Laboratory of the “Institut du Radium”, Paris, France, 7 November 2017
 38. Magurele Physics Campus, Magurele, Romania, 15 November 2017
 39. Institute of Spectroscopy, ISAN, Troitsk, Russia, 20 June 2018
 40. Dunsink Observatory, Dublin, Ireland, 23 June 2018
 41. Halde Observatory, Alta, Norway, 26 August 2018
 42. Laboratories of Kirchhoff and Bunsen, Heidelberg, Germany, 1 October 2018
 43. Old Physics Building of the Eötvös Loránd University, Budapest, Hungary, 12 October 2018
 44. Laboratorium Bergara, Basque Country, Spain, 20 October 2018
 45. Jungfrauoch Research Station, Switzerland, 8 February 2019
 46. Institute of Physics of Archirafi Street, Palermo, Italy, 18 February 2019
 47. Atominstytut, TU, Vienna, Austria, 21–22 May 2019
 48. Holy Spirit College, Leuven, Belgium, 23 May 2019
 49. The Former Physics Institute, Frankfurt am Main, 4 September 2019
 50. Mendeleev’s Museum-Archive, St. Petersburg, Russia, 12 September 2019
 51. Birr Castle, Demesne, Ireland, 20 September 2019
 52. Institute for High Voltage Engineering, RWTH, Aachen, Germany, 30 September 2019
 53. The Academy of Sciences of the Bologna Institute, Italy, 7 November 2019
 54. The Physics Department at the University of Dundee, UK, 2 December 2019
 55. Les Houches School of Physics, Les Houches, France, 5 October 2020
 56. City of Jena, Germany, 7 June 2021
 57. A.J. Ångström Physics Institute, Uppsala, Sweden, 6 August 2021
 58. Ampère House, Lyon (Poleymieux), France, 6 October 2021
 59. Cyclotron Hall, Louvain-La-Neuve, Belgium, 12 October 2021
 60. Magnus-Haus, Berlin, Germany, 15 October 2021
- Cf. https://www.eps.org/general/custom.asp?page=distinction_sites
- The HS Committee examines the proposals typically three times per year. A couple more sites have already been approved and await inaugurations in 2022.
- Members of the EPS HS Committee during 2020 were: Karl Grandin (Chair), Luisa Cifarelli, Goran Djordjevic, Ursel Fantz, Alain Fontaine and Jim Hough. Representing the EPS Young Minds Hripsime Mkrtchyan. The chair and the communication coordinator at EPS Mulhouse, Gina Gunaratnam, have continued working on establishing a database system for the nominations.
- For each inauguration event, a plaque is unveiled in the presence of the local representatives and authorities. The EPS President or his representative (Past President or Member of the EPS Executive Committee or Member of the EPS HS Committee) attends the ceremony. For each ceremony, a news is published right away in the electronic newsletter e-EPS and on the EPS web site, and an extended article is published afterwards in *EPN*.

YOUNG MINDS

Chair: Richard Zeltner



Young Minds is an EPS programme launched in 2010 with the aim of bringing together students and early career researchers in Physics and foster the excellence among them by encouraging the creation of local groups called sections and ensuring the possibility to access an annual budget to carry on student-led activities falling in three main categories: outreach, networking and professional development. Young Minds has now reached ten years of activity with 86 sections in 37 countries. Of those 86 sections, about 60 are considered active, e.g. they have applied for funding or attended the leadership meeting recently.

Project Management and Action Committee

In 2020 the full Young Minds Action Committee comprised EPS President Petra Rudolf, EPS Secretary General David Lee, EPS Executive Committee member Sylvie Jacquemot (until May), Roberta Caruso (first as chair and then as EPS Executive Committee member from May onwards), EPS Conference manager Ophélie Fornari, Richard Zeltner (chair, Germany), Daryna Pesina (Sweden), Tanausú Hernández Yanes (Poland), Mattia Ostinato (Spain), Hripsime Mkrtchyan (Armenia), Carmen Martin (Spain) and Imran Khan (Germany, will leave in Q1 2021).

The full Young Minds Action Committee comprises EPS President Luc Bergé, EPS Secretary General David Lee, Executive Committee member Roberta Caruso, EPS YM Programme manager Ophélie Fornari, Richard Zeltner (chair, Germany), Daryna Pesina (Sweden), Tanausú Hernández Yanes (Poland), Mattia Ostinato (Spain), Hripsime Mkrtchyan (Armenia) and Carmen Martin (Spain).

Each member of the Action Committee serves as direct contact point for a number

2021 ACTIVITY GRANTS	REQUESTS	APPROVED WITH FULL AMOUNT	APPROVED WITH REDUCED AMOUNT	TOTAL AMOUNT REQUESTED (€)	TOTAL AMOUNT GRANTED (€)
January 15 th deadline	29	17 (59%)	12 (41%)	10.358	8.278
January 15 th deadline	26	18 (69%)	8 (31%)	6.026	5.318
Total	55	35	20	16.384	13.596

2021 YMCA	REQUEST	APPROVED WITH FULL AMOUNT	APPROVED WITH REDUCED AMOUNT	TOTAL AMOUNT REQUESTED (€)	TOTAL AMOUNT GRANTED (€)
January 15 th deadline	2	2 (100%)	0	1.798	1.798
April 15 th deadline	0	0	0	0	0
January 15 th deadline	3	3 (100%)	0	2.700	2.700
October 15 th deadline	1	1 (100%)	0	580	580
Total	6	6	0	5.078	5.078

of sections within the EPS YM Network. To streamline the communication between sections and their respective points of contact, the Action Committee decided to assign the sections to committee members in the future based on their geographical location: The YM network was split into 6 geographical zones, and each zone was assigned to an AC member.

In consideration of the significant growth of the YM network in the past years and the stronger engagement of the Action Committee in the organisation of various events the Action Committee has opened a call for applications to join its ranks in December 2021.

Section Development and Grants

In 2021 the programme established 6 new sections, 3 of them in countries that were not represented within the EPS YM network yet (Luxembourg, Greece), for a total of 86 sections in 37 countries.

Each section is entitled to apply for a maximum of 1000€ for funding to support activities falling in at least one of the three categories: outreach, networking and professional development. There are two deadlines per year – January 15th and July 15th.

Starting from January 2019, the Action Committee introduced the Young Minds Conference Award (YMCA), designed as a specific support for conferences or sessions

organised by Young Minds sections. YM Conference Grants have been introduced to guarantee high visibility to EPS YM during large events involving the scientific community. The applicants are requested to guarantee a timeslot to present the YM project during the event, or alternatively to distribute YM promo material.

Each section can apply for a maximum of 1000€ for the YMCA and up to 1000€ for the regular Activity Grant. The tables below summarise the number of grant requests, the number of grants approved, the total amount of funding requested, and the total amount of funding granted for each deadline.

Sections are assisted during the grant submission process, and especially for the YMCA the Action Committee provides feedback and the possibility to resubmit the grant, in a sort of peer review process that helps both parties.

Compared to 2020 there have been significantly fewer activity grant applications (55 in 2021 vs. 76 in 2020). Notably, while the number of grant applications for the July deadline remained constant (26 in 2021 vs. 25 in 2020), the deadline in January has seen a major drop from 51 applications in 2020 to 29 applications in 2021. This effect may well be explained by the pandemic situation, since many countries in the EPS YM network faced large Corona case numbers during the winter months. The restrictions many governments put in place in response to the situation, may have kept many sections from submitting an application. The decrease



◀ Group picture of the participants to the Leadership Meeting in Erlangen, May 2019. Courtesy of MPL.

in the number of applications was also accompanied by a decrease in the requested budget, from 25.117 € in 2020 to 16.384 € in 2021, and, consequently, in a decrease in the approved budget, from 20.968 € in 2020 to 13.596 € in 2021. The approval rate, as defined by the ratio of the granted budget over the total requested budget, remained constant at about 83 %.

The number of YMCA applications in 2021 increased as compared to 2020, from 3 to 6, as did the granted funding, from 3000 € in 2020 to 5078 € in 2021. Taking the Activity Grant and the YMCA applications together the Young Minds Programme has granted 18.674 € for supporting the sections in their activities.

The following plot summarises how the approved funding is distributed over the different countries within the YM network. Blue bars indicate approved activity grants, orange bars indicate approved YMCAs.

In total, sections from 19 different countries, ranging from Egypt to Lithuania, received funding from the EPS Young Minds Programme. While the traditionally strong cluster of long-standing and very active sections in Italy, Spain and Portugal received about 35 % of the funding (6603 €), it is gratifying to see that a significant amount of support went into the eastern regions of the YM network. Sections in Ukraine, Czech republic, Russia, Belarus, Serbia, Armenia and Poland received about 37 % of the allocated funds (6893 €). The remaining 28 % of the funding (5178 €) are distributed over the remaining regions within the YM network.

Young Minds and EPS

During the 11th Polish Symposium on Physics in Economy and Social Sciences, taking place on June 30, 2021, the YM session at the Wroclaw University organised a webinar with Prof. Petra Rudolf on how to prepare for a career in academia.

Members of the Action Committee have been actively involved in the organisation of the Rencontres Physique Entreprise Recherche (RPER) meeting, a meeting designed to provide young researchers insights into the industrial realm, which took place in September, 2021 in Paris. EPS generously granted support for travel and accommodation for YM members interested in joining the event, and ten YM members registered for the meeting. An article on this collaboration between the French Physical Society (SFP), EPS and EPS YM was published in Europhysics News 53/1, 2022.

17 members from the YM network supported the EPS organisation committee for the CLEO[®]/Europe - EQEC 2021. Specifically, they ensured the smooth process of the various technical sessions taking place virtually on ZOOM.

A new YM section in each issue of Europhysics News (EPN) has been established in 2020. Among the articles published in the YM section in 2021, the contribution to EPN 52-2 is particularly noteworthy. Being written by Dr. Mažena Mackoiti-Sinkevičienė, from the YM Vilnius section, it has been the first contribution to EPN provided by a section.

Richard Zeltner, Daryna Pesina and Hripsime Mkrtychyan are members of the programme committee for the EPS Forum that will take place in 2022 at Sorbonne University in Paris. Richard Zeltner is serving as the referent for the WG3 (“Quantum Technologies and Photonics”) and as a member of WG5 (“Biophysics, technological sequencing of biomolecules and human health”). Daryna Pesina is a member of the WG4 (“Machine learning and Artificial Intelligence”) and Hripsime Mkrtychyan is a member of WG3 (“European Integration”). Since the Leadership Meeting 2022 will be co-located with the EPS Forum (for more details see following section), Mattia Ostinato, the leader of the LM 2022 organisation team is a member of the EPS Forum organisation committee.

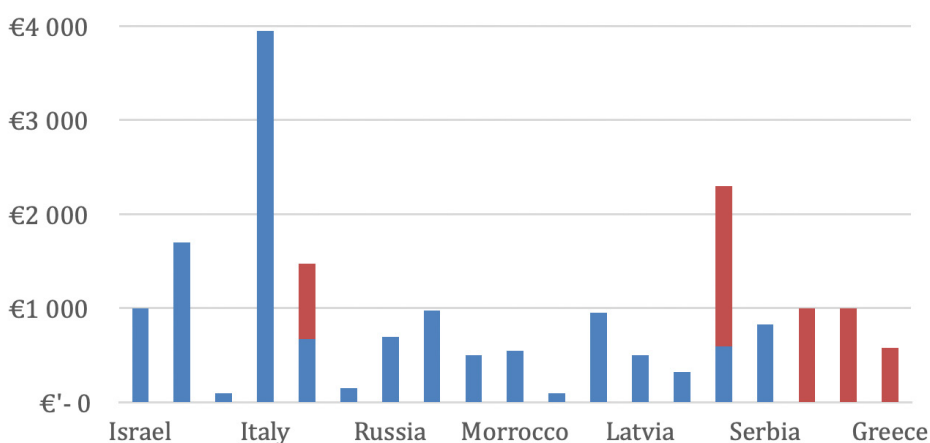
Young Minds continued to regularly publish on e-EPS, the online magazine of EPS. In 2020 Carmen Martin followed Daryna Pesina as the contact person within the Action Committee for the e-EPS.

Hripsime Mkrtychyan is representing YM in the Historic Sites Committee and Daryna Pesina is representing YM in the Equal Opportunity Committee.

9th Leadership Meeting and outlook to the 10th LM in 2022

After the cancelled leadership meeting in 2020, and in consideration of the unclear situation regarding the Corona-pandemic in spring 2021, the Action Committee decided to host the Leadership meeting 2021 in a virtual format. Taking place on May 7 2021, the meeting brought together 55 section delegates, representing more than 30 sections and 21 countries from Europe and the Mediterranean. A particular highlight of the event was a panel discussion on career advice for young scientists, which featured 5 speakers from industry and academia that shared their insights and experiences with the Young Minds, as well as a scientific pub quiz that allowed the participants to refresh old and create new bonds in an informal atmosphere. Presentations of the EPS YM programme manager Ophélie Fornari, EPS YM Chair Richard Zeltner and EPS President Luc Bergé briefed the delegates on the latest news and developments within EPS YM

Geographical distribution of funding in 2021



and EPS and were particularly helpful for delegates of quite recent sections. In consideration of the large number of registered delegates and the positive feedback the YM Action Committee received on both the programme and the implementation of the meeting it can be considered a large success. A more detailed summary of the event is given in Europhysics News 52/4, 2021, p. 12-13 [<https://doi.org/10.1051/eprn/2021401>].

In 2021 Luc Bergé established the EPS Forum as a new conference format of EPS, and invited the Young Minds Programme to co-host its leadership meeting at the Forum, such that the leadership meeting 2022 will take place from June 2-3 at the Sorbonne University in Paris. Being integrated into a larger scientific conference, featuring high-profile speakers from both academia and industry, the LM 2022 will provide participating delegates networking and professional developments opportunities well beyond that of previous meetings.

Webinars and other activities

In 2021 the Young Minds Programme joined forces with the European office of Optica to organise and implement “From PhD to CEO”, a webinar series on entrepreneurs from the field of optics and photonics. In each webinar one invited founder gives a talk on his or her journey, which is followed by a Q&A session. The first edition of the session featured 6 speakers from Spain, Portugal, Sweden, Ireland and Germany. The selection and invitation of the speakers followed the premise to achieve gender-balance, and to represent as many countries and different fields of technology as possible, to make the series inclusive and appealing for a large audience. Two of the speakers, Michael Förtsch, former treasurer of the Erlangen section in Germany, and María Aymerich López, former president of the section in Santiago de Compostela, Spain, are EPS YM Alumni. With more than 500 registrations the first edition was very well received, such that Optica, EPS and EPS YM decided to implement a second edition which started in October 2021. It is still ongoing and has, up to the time this

report is being written, featured speakers from Switzerland, Estonia, Poland and Italy. More details on the motivation behind the series can be found in an article from Richard Zeltner, Yann Amouroux and Claus Roll (both from the European Optica office) published in Europhysics News 52/5, 2021, p. 13-14

The Action Committee received very positive feedback from the YM network on the mental health webinar with Dr. Andrea Welsh organised in 2020, making it clear that the issue is of importance and relevance for the community. Acknowledging this the Action Committee joined forces with “The International Association of Physics Students” (IAPS) to organise a follow-up webinar on that matter. We reached out to the non-profit organisation Dragonfly Mental Health, which kindly agreed to provide a webinar for the IAPS and EPS YM community. It took place on December 9, was recorded and was made available to the community on the EPS YM YouTube account.

CONFERENCE COMMITTEE

Chair: Marian Reiffers

The Conference Committee from January 2021 consisted of the following members: Christian Beck, Ophélie Fornari (secretary), Alice Valkárová, Els de Wolf, Teresa Peña and Marian Reiffers (chair). Due to organisational changes in the EPS Conference Services Department, Patricia Helfenstein replaced Ophélie Fornari from February 2021.

We have to claim that COVID’s significant impact on the organisation of all scientific conferences in the world continued. Most of them were either postponed, delayed or cancelled. There was also a way of organising some conferences in virtual form (online). These facts substantially changed the system of organisation of conferences. Therefore, the original idea of the committee was still not fulfilled.

However, the situation is slowly normalising. On the other hand, we don’t know the now influence of war and economic crisis (mainly increasing prices). We still hope

that the situation in future will be better.

Despite this situation, we have approved a total of eight conferences. This number is still not as before COVID but means increasing numbers.

Therefore, we hope that activity in this field will be more intense in next future.

DISTINCTIONS AND AWARD COMMITTEE

Chair: Jo Hermans,
Members: Angela Bracco,
Elisabeth Rachlew, Marian Reiffers

The following distinctions and prizes were awarded during the year 2021:

- The **2020 EPS-QEOD Prize for Research in Laser Science and Applications** was attributed to **Sergey Bozhevolnyi**, Center for Nano Optics, University of Southern Denmark, Odense, ‘for seminal contributions to surface-plasmon polaritons and the developments of plasmonic metasurfaces’.
- The **2020 IBA-Europhysics Prize** was awarded to **Thomas Haberer**, Heidelberg University Hospital, Germany, ‘for outstanding scientific discoveries and innovative technological breakthroughs in the use of high energy accelerators and heavy ion beams for the Heavy Ion Cancer therapy’.
- The **2021 EPS High Energy and Particle Physics prize** was awarded to **Torbjörn Sjöstrand** and **Bryan Webber**, ‘for the conception, development and realisation of parton shower Monte Carlo simulations, yielding an accurate description of particle collisions in terms of quantum chromodynamics and electroweak interactions, and thereby enabling the experimental validation of the Standard Model, particle discoveries and searches for new physics’.
- The **2021 Giuseppe and Vanna Cocconi Prize** was awarded to the **Borexino Collaboration** ‘for their ground-breaking observation of solar neutrinos from the pp and CNO chains that provided unique and comprehensive tests of the Sun as a nuclear fusion engine’.
- The **2021 Gribov Medal** was awarded to

- Bernhard Mistlberger** ‘for his groundbreaking contributions to multi-loop computations in QCD and to high-precision predictions of Higgs and vector boson production at hadron colliders’.
- The **2021 Young Experimental Physicist Prize of the High Energy and Particle Physics Division of the EPS** is awarded to **Nathan Jurik** ‘for his outstanding contributions to the LHCb experiment, including the discovery of pentaquarks, and the measurements of CP violation and mixing in the B and D meson systems’; and to **Ben Nachman** ‘for exceptional contributions to the study of QCD jets as a probe of QCD dynamics and as a tool for new physics searches, his innovative application of machine learning for characterising jets, and the development of novel strategies on jet reconstruction and calibration at the ATLAS experiment’.
 - The **2021 Outreach Prize of the High Energy and Particle Physics Division of the EPS** is awarded to **Uta Bilow** and **Kenneth Cecire** ‘for the long-term coordination and major expansion of the International Particle Physics Master Classes to include a range of modern methods and exercises, and connecting scientists from all the major LHC and Fermilab experiments to school pupils across the world’; and to **Sascha Mehlhase** ‘for the design and creation of the ATLAS detector and other interlocking-brick models, creating an international outreach program that reaches to an unusually young audience’.
 - The **Fresnel Prize (fundamental aspects)** was awarded to **Michael Zuerch**, University of California Berkeley, USA ‘for outstanding contributions to the field of ultrafast condensed-matter science and the application of linear and nonlinear X-ray spectroscopies for investigating of quantum phenomena’.
 - The **Fresnel Prize (applied aspects)** was awarded to **Margherita Maiuri**, Politecnico di Milano, Italy, ‘for outstanding achievements in ultrafast optical spectroscopy, unveiling primary light-induced processes in bio-molecules and nanostructures with sub-10-fs pulses’.
 - The **Summer 2021 EPS Emmy Noether Distinction** was awarded to **Sara Bolognesi**, CEA – IRFU, France, ‘for her development of data analysis techniques that conclusively improved the sensitivity of the CERN-CMS experiment, thus allowing the discovery of the Higgs boson and the first measurement of its spin and parity’.
 - The **EPS/QEOD Thesis Prizes (fundamental aspects)** were awarded to **Renwen Yu**, Present institution: Stanford University, CA, USA, PhD thesis at ICFO – The Institute of Photonic Sciences, Barcelona, Spain. Title: Toward Next-Generation Nanophotonic Devices, and to **Gonçaves Paulo André Dias**, Present institution: ICFO – The Institute of Photonic Sciences, Barcelona, Spain, PhD thesis at Technical University of Denmark. Title: Plasmonics and Light-Matter Interactions in Two-Dimensional Materials and in Metal Nanostructures: Classical and Quantum Considerations.
 - The **EPS/QEOD Thesis Prizes (applied aspects)** were awarded to **Maxim Karpov**, Present institution: Centre Suisse d’Electronique et de Microtechnique (CSEM), Neuchâtel, Switzerland; PhD Thesis at École Polytechnique Fédérale de Lausanne. Title: Dynamics and applications of dissipative Kerr solitons, and to **Pedro Bustos Felipe Ignacio**, Present institution: LAM - Laboratoire d’Astrophysique de Marseille, France; PhD Thesis at Johannes Gutenberg Universität-Mainz, Germany. Title: Mesospheric magnetometry and optimization of laser guide stars.
 - The **2021 EPS Liquid Matter Prize** was awarded to Professor **Daan Frenkel** ‘for his pioneering work in using computer simulations to map out the remarkably rich liquid crystal phase behaviour of hard rod-like and plate-like particles, which has inspired generations of young researchers’.
 - The **2021 EPS-DPP PhD Research Awards** have been attributed to **Audrey Chatain** (Université Paris-Saclay, France) for her thesis on ‘Aerosol-plasma interaction in Titan’s ionosphere’, to **Alexandra Dudkovskaia** (University of York, United Kingdom) for her thesis on ‘Modelling neoclassical tearing modes in tokamak plasmas’, to **Mario Galletti** (University of Lisbon, Portugal) for his thesis on ‘High contrast front-end for a petawatt laser system designed for electron acceleration & High intensity laser-matter applications towards advanced compact particle accelerators’, and to **Andrea Pavone** (Technical University of Berlin) for his thesis on ‘Machine learning approximation of bayesian inference in nuclear fusion’.
 - The **EPS Statistical and Nonlinear Physics Prize 2021** was awarded to **Albert-László Barabási**, Northeastern University and Harvard Medical School, Boston & Central European University, Budapest, ‘for his pioneering contributions to the development of complex network science, in particular for his seminal work on scale-free networks, the preferential attachment model, error and attack tolerance in complex networks, controllability of complex networks, the physics of social ties, communities, and human mobility patterns, genetic, metabolic, and biochemical networks, as well as applications in network biology and network medicine’, and to **Angelo Vulpiani**, Sapienza University, Rome, ‘for his seminal contributions to statistical and nonlinear physics, touching fundamentally important issues in dynamical systems theory and statistical mechanics, including the mechanism of stochastic resonance, multifractality of invariant sets of dynamical systems, the dynamics and multifractal properties of turbulent flows, chaos in Hamiltonian systems, and the limits of predictability in complex systems’.
 - The **EPS-SNPD Early Career prize 2021** was awarded to **Federico Battiston**, Central European University, Vienna, ‘for his outstanding work on nonlinear dynamics and emergent collective phenomena in multilayer and higher-order networks, including diffusion, synchronization, social and evolutionary processes’, and to **Caterina De Bacco**, Max Planck Institute for Intelligent Systems, Tuebingen, ‘for her outstanding work on statistical physics of random walkers on random graphs, stochastic search processes, routing optimization on networks and effective algorithms for community detection’.

EQUAL OPPORTUNITIES COMMITTEE

Chair: K. van der Beek

On the EPS Equal Opportunities Committee

The mission of the EPS Equal Opportunities Committee (EOC) is to promote and to encourage diversity and equal access of all physicists to career and employment opportunities, professional resources in the fields of physics and physics education, regardless of gender, ethnicity, or nationality. The EOC works for fair and equal treatment of all physicists in their professional environment, including professional networks, publishing, and conferences. It combats predatory behaviour based on gender, ethnicity, or nationality.

A major part of the EOC's activities focuses on ensuring equal opportunities for women physicists. For this, the EOC monitors participation in EPS and other events such as conferences by gender (within the scope of the Gender Fairness project). It defends, at the very least, a representative participation of women physicists on Boards and committees such as those of EPS D&G, collaborating societies, conference committees, and other instances. The EOC organises and participates in events designed to promote awareness of the gender gap and the need for proactive measures to promote equal opportunities. It also publishes papers in EPS media and elsewhere in order to promote such awareness. Where possible, the EOC participates in surveys designed to measure the gender gap.

The EOC's mission cannot, however, be limited to the gender issue. It must also include the promotion of physics, physics education, and physics careers among members of underrepresented ethnic descent or nationality.

Composition of the EPS EOC

The EPS EOC today consists of 6 members. They are:

- **Nadia Martucciello**, CNR Spin, Italy, EPS CMD
- **Daryna Pesina**, O. Ya. Usikov Institute for Radio Physics and Electronics, Ukraine, EPS Young Minds

- **Ana Proykova**, University of Sofia, Bulgaria, EPS NPD
- **Eija Tuominen**, Helsinki Institute of Physics / University of Helsinki, Finland, EPS HEPP
- **Els de Wolf**, NIKHEF Amsterdam, the Netherlands, EPS HEPP Division, EPN Editor
- **Kees van der Beek**, CNRS, France, EPD CMD, EPS Executive Committee

The Members of the EOC met online on July 9th, 2021. During this meeting, Martine Bosman of IFAE, Barcelona, Spain (EPS HEPP Division) and Elizabeth Rachlew of Uppsala university, Sweden (EPS AMOPD), both on the EOC since its foundation, stated they wished to step down. A successor to Elizabeth Rachlew has been found in Eija Tuominen of the Helsinki Institute of Physics / University of Helsinki, Finland. Eija Tuominen is the chairwoman of the European Platform of Women Scientists EPWS. Other members are being recruited.

2021 and the EOC

The effects of COVID-19 still overshadowed activities in physics research¹ and those of the EOC. It is foreseeable that COVID disruptions will have a large effect on the recruitment, assessment, and promotion of women physicists. Already in 2021 one is witnessing a waning of woman candidatures for professorial and researcher positions. It is the duty of the EOC to be alert as concerns such perverse effects, and to warn our communities and institutions of these.

It is noted that the withdrawal of several members from the EOC and the significant volume of the new professional responsibilities of the EOC spokesperson, Kees van der Beek, have very adversely affected the activity of the EOC in 2021.

Emmy Noether Distinction

In order to promote the visibility of women physicists, The EOC proposes the laureate for the EPS Emmy Noether distinction for women in physics, on the criteria of the nominee's contributions to physics, of her leadership capacity as a principal investigator, on her involvement in research administration, committees, and editorial activities, on her involvement in teaching and educational programmes, and on her action in favour of the community, be it in the promotion of equal opportunities, or in a wider sense within the scope of learned societies and the like.

The Emmy Noether distinction is awarded twice yearly. The summer distinction is "traditionally" awarded to a junior or early career physicist, in 2021, Sara Bolognesi, researcher at CEA-IRFU (Saclay, France) was selected among 8 candidates². The Distinction will be awarded during the EPS Forum on June 3, 2022. The call for the 2021 winter distinction, typically awarded to a senior scientist having been active in physics for two or three decades already, was closed on October 15th, 2021. 16 nominations were received.

Kees van der Beek travelled to Barcelona to present the Winter 2020 Emmy Noether Distinction diploma and medal to María García-Parajo³ on Monday March 28th, 2022.

Publications

Emmy Noether Distinction laureate María García-Parajo was interviewed for e-EPS as well as for Europhysics News. The interview appeared in EPN Issue 52-3 (2021)⁴. Summer 2021 Emmy Noether Distinction laureate Sara Bolognesi was interviewed for e-EPS⁵. Kees van der Beek authored the tribute to Claudine Hermann that appeared in EPN Issue 52-4 (2021).

¹ See e.g. "The pandemic and the female academic", Nature, April 17th 2020; "Women academics seem to be submitting fewer papers during coronavirus", The Lily, April 2020; "Women's research plummets during lockdown - but articles from men increase", The Guardian, May 12th, 2020; "Women are battling both COVID-19 and patriarchy", Times Higher Education, May 15th, 2020; "Women are getting less research done than men during this coronavirus pandemic", The Conversation, May 18th, 2020.

² See https://www.eps.org/page/distinction_prize_en and <https://www.cea.fr/drf/Pages/Actualites/Vie-de-la-DRF/2021/sara-bolognesi-recoit-le-prix-emmy-noether-de-la-societe-europeenne-de-physique.aspx/>

³ See <https://www.icfo.eu/newsroom/icfo-news/>

⁴ See <https://www.eps.org/blogpost/751263/370514/Maria-Garcia-Parajo-The-thrill-of-discovery>

⁵ See <https://www.eps.org/blogpost/751263/376679/An-interview-with-Sara-Bolognesi-Every-day-I-learn-something-new>

Event organisation and participation in Events

Most events in which members of the EOC participated were held online. In particular, Kees van der Beek represented the EOC in the September 28th online panel session of the DPG Working Group for Equal Opportunities on “The time after: How COVID-19 crisis redefined R&I leadership”, held during the online meeting of DPG-SKM. He also represented the EOC during the November 25th, 2021 CNRS training course on “Constructing one’s career as a woman physicist” held in Gif-sur-Yvette, France, and during the March 8th meeting of the CNRS directors of physics laboratories in Paris (France).

The EOC in 2021

The EOC will continue to attribute the Emmy Noether Distinction. Given restrictions of different kinds, among which the reconstitution of the complete EOC and professional obligations of the EOC chairman, a huge delay in discussing and attributing the Winter 2021 distinction has been contracted. The delay is impacting the 2022 Summer call.

Within the scope of the Gender Fairness project, the EOC will continue to monitor and report on gender representation in EPS and EPS-sponsored conferences, and provide recommendations on how to improve diversity and fair representation during conferences. In this respect, contacts with EPS D&G as well as with the inclusiveness and diversity committees of national societies will be reinforced wherever possible. The recommendations of the EPS Action Plans as to combating non-professional and predatory behaviour at conferences and other events will be implemented.

A plan of action regarding specific measures to be taken as a result of the COVID-19 pandemic, including recommendations and publications will be undertaken.

In the light of consolidating female and minority role models in physics, the EOC will continue the practice of regular interviews for e-EPS and EPN, articles and columns in EPN, and prepare, with the help of Gina Gunaratnam, a 2023 “Inspiring women physicists” calendar.

COMMITTEE ON EUROPE INTEGRATION

Chair: Radu Constantinescu, Goran Djordjevic, Maciej Kolwas, Denes Lajos Nagy, Alexei Morozov, Sofoklis Sotiriou, Gertrud Zwicknagl

The strategy in the pandemic situation

Unfortunately, the activity from 2021 was still affected by the Covid pandemic. It obliged the Committee of European Integration to keep its strategy of promoting Physics across Central, Eastern and Southern parts of Europe through online activities. This strategy took into consideration the following five directions:

1. Integrating the access to research infrastructures in Europe.
2. Student training through a School Programme supported by the EPS.
3. Physics education and teacher training.
4. Strengthening the regional cooperation among EPS member societies and other
5. Regional organisations.
6. Promotion of physics in the regions.

Main activities in 2021

As we previously mentioned, because of the pandemic, many activities were organised in the online format. However, a number of onsite meetings and visits whose organisation was supported by the Committee took also place. Here is the information on the main activities organised under the EPS – CEI aegis.

1. The SEENET-MTP Balkan Workshop BW2021

The EPS-CEI supported the organisation of the SEENET-MTP Balkan Workshop - BW2021, Belgrade (Serbia), from September 6 to September 10, 2021. Despite a number of “last-minute cancellation” because of the Covid pandemic, the activity was very successful. More than 30 participants from 8 countries, with different scientific experience (from PhD students to the world leading scientists and experts), attended the Workshop. Held in a hybrid format, it included a scientific session with 16 presentations, as well as several important

activities devoted to the regional and inter-regional cooperation. A book of extended abstracts has been published.

The common conclusion was that the inter-regional collaboration is of fundamental importance for the improvement of the higher education and research in South-East Europe, the support of institutions and organisations such as EPS, UNESCO, CEI, ICTP, and CERN being much appreciated.

2. The Joint Meeting of the EPS Committee of European Integration and the BPU Executive Committee.

The meeting was held on September 7, 2021, jointly with the SEENET-MTP & Balkan Workshop. The EPS-CEI was represented by: R. Constantinescu (onsite), G. Zwicknagl (online), G. Djordjevic (onsite), S. Sotiriou (online). D. Nagy, A. Morozov and M. Kolwas were excused.

Representatives of the Balkan Physical Union Ex Com were: G. Djordjevic (President), R. Constantinescu (Vice-President), K. Vourlias (Executive Secretary), E. Batchvarova (Scientific Secretary) and A. Ertoprak, (Scientific Project Coordinator, online presence). Luc Bergé (EPS President) and David Lee (EPS Secretary General) were also present online, as invited guests. The following issues were discussed:

- The organisation of the Third Balkan Physics Olympiad (BPO3);
- The status of the BPU as a legal entity, following the EPS model;
- A program for supporting physicists from Albania and North Macedonia has been established.
- A regional online seminar on theoretical physics has been launched.

3. The third edition of the Balkan Physics Olympiad.

The third edition of the contest addressed to high school students was organised by Bulgaria, in the online format. It was held with the support of the EPS on September 25, 2021. The EPS President, Luc Bergé, addressed a word of welcome and success to the participants from 15 countries: all 10 BPU members and 5 guest countries (Bosnia and Herzegovina, Slovenia, Iran, Kazakhstan and Turkmenistan). Prof. Maya Zhekova from the University of Sofia was

the chairperson of the BPO3 Scientific Committee. Details on the competition can be found at http://upb.phys.uni-sofia.bg/projects/BPO3/index_en.html.

4. Mobility of scientists inside the Central and South-Eastern parts of Europe.

EPS-CEI has joined the Network Program NT-03 financed by ICTP, a cooperation tool for researchers from South-Eastern European countries. It was a mobility programme equally addressed to senior researchers and early-stage researchers, including students. EPS-CEI helped in the organisation of the visits and partially supported them. A number of 8 visits were organised in 2021. These visits involved, as guest or host institutions, universities and research institutes from 7 countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Romania and Serbia. The main activities reported at the end of the visits consisted of lectures, workshops, meetings and discussions on future cooperation.

ACTION PLAN FOR 2022

In 2022 EPS-CEI will support the organisation of onsite meetings and conferences, activities that, after the pandemic period, will allow the coming back to the normal scientific life.

More specifically, the EPS-CEI takes into consideration the following Action Plan and financing amounts:

1. The next meeting of the EPS-CEI will be organised in Belgrade (Serbia), jointly with the BPU Committee, with invited participants from DPG, CERN, ICTP and EPS, with an accent on the organisation of the largest meeting of the Physicists from the Balkan region in 2022, in Serbia.
2. Support for scientists from South-Eastern countries for participating in the 11th BPU Congress that will be held in Belgrade, in September 2022.
3. A new edition of the South-Eastern European PhD School, jointly organised with the Balkan Physics Union General Congress (BPU 11) in Belgrade (Serbia), in partnership with CERN and SEENET-MTP. As in the previous case, participation of students from Central and South-Eastern European countries will be

partially supported.

4. The fourth edition of the Balkan Physics Olympiad to be organised in Cyprus, contest addressed to high school students.

5. Support for the special mobility programme initiated in 2021 and addressed to scientists from Albania and North Macedonia. Special support will be devoted to scientists from Ukraine.

6. Supporting the organisation and/or the participation of scientists in conferences aiming to promote the cooperation in the South-Eastern Europe, as well as the participation of young researchers in Summer Schools or conferences jointly organised with EPS.

FORUM PHYSICS AND SOCIETY

Chair: Carlos Hidalgo

The meeting on “PHYSICS FOR SOCIETY: GRAND CHALLENGES IN THE HORIZON 2050” was held at the Magnus Haus in Berlin from October 28 to October 29 (2021). It was jointly organised by the European Physical Society (EPS) and the German Physical Society (DPG) on the occasion of the DPG’s 175 year-Anniversary. The conference, with hybrid

format, attracted nearly 300 people (on-line participation) as well as nearly 30 invited speakers (on-site) from different international institutions. The DPG hosts provided an excellent and unique atmosphere for the meeting (<https://www.forumphysicsandsociety.org/>).

The scientific committee, chaired by Carlos Hidalgo and session coordinators from different EU institutions (Ralph Assmann, Felicia Barbato, Christian Beck, Kees van der Beek, Giulio Cerullo, Luisa Cifarelli, Felix Ritort, Mairi Sakellariadou, Bart van Tiggelen, Claudia-Elisabeth Wulz), played a key role in the development of the programme. This addressed two major pillars: a) Physics as global human enterprise for understanding nature and b) Physics developments to tackle major issues affecting the lives of citizens.

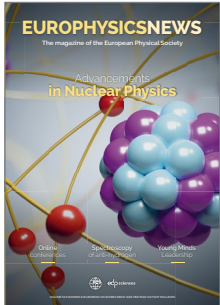
The meeting offered plenary lectures covering a wide range of topics: Physics bridging the infinities, the smallest scales and the largest scales; Matter and waves; Physics for understanding life: searching for life in the universe and intelligence and life; Physics for health, accelerators and bionics & robotics; Physics for environment and sustainable development: earth, climate and energy; Physics for secure and efficient societies:



▲ Magnus Haus, Berlin

JOURNALS REPORTS 2021

EUROPHYSICS NEWS (EPN)



Editor:
Els de Wolf

Science Editor:
Ferenc Iglói

In 2021 the EPN 52 edition comprised five issues published in February, May, July, October and December. The mini-themes for the edition were established in the annual meeting with the Editorial Advisory Board in September 2020: ‘The physics of black holes’, ‘Teaching physics online’, ‘Low temperature physics’ and ‘Advancements in nuclear physics’. The December issue was a double thick special issue on ‘Research for the energy transition’. We are grateful to the guest editors Luisa Cifarelli and Francesco Romanelli for their excellent work and efforts for a very attractive issue (see figure below) at the end of the year.

The EPN editors team

As before, in 2021 the EPN-editors team comprised Ferenc Iglói, science editor, Xavier de Araujo, graphical designer, Jo Hermans, special editor, David Lee,

executive editor and Els de Wolf, general editor. The team was supported by the Editorial Advisory Board (EAB) with advice about the content and direction of EPN and suggestions for authors. In the EAB we bid farewell to Gonçalo Figueira, Zsolt Fülöp and Laurence Ramos, who have reached the end of their term of office, and to Christophe Keller, who has moved to the United States. Virginie Ponsinet (Bordeaux), Marek Lewitowicz (Paris) and Bernardo Gonçalves Almeida (Lisbon) joined the team in 2021.

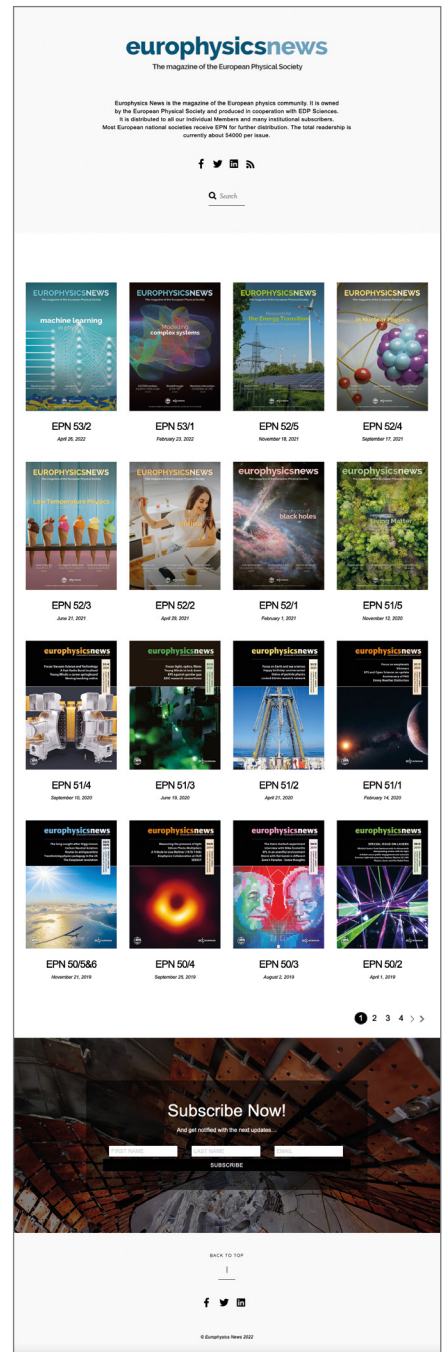
Some statistics

The EPN 52 edition had in total 196 pages. As in earlier years, two major sections can be recognised: ‘In the spotlights’ with about 20 pages on recent remarkable events or people in the physics community; and the ‘Features’ with about 85 pages for more in-depth articles. Together the two sections comprised about 54% of the available pages in the edition. Smaller sections included columns, book reviews and obituaries. About 20% of the pages was used for advertisements.

In each issue, three sections were exclusively dedicated to EPS activities: the Editorial of the President, two pages EPS NEWS, maintained by Luc Bergé and David Lee and two pages for the EPS Young Minds, maintained by Richard Zeltner, chair of the Young Minds Action Committee. For future reference, the reports of the inaugurations of EPS Historic Sites in 2021, a list of EPS awardees, provided by J. Hermans, and the EPS index was published in the December issue.

The websites

The Open Access EPN repository website www.epn.epn.org is maintained by Xavier de Araujo. It is a straightforward website with flipbooks – very useful for early reference in the social media or for authors to download their contribution. Interested readers can register for an alert if a new EPN issue is stored. Highly recommended!



EPL



Chairman of the Board of Directors:
Petra Rudolf (EPS Groningen)

Editor in Chief (2021):

Bart van Tiggelen (Grenoble)

Editor in Chief (2022-):

J. Gonzalo Muga (Bilbao)

Executive Editor:

Anne Ruimy (EDP-Sciences Les Ulis)

Staff Editor:

Frédéric Burr (EPS Mulhouse)

Production Editor:

Barbara Ancarani (SIF Bologna)

Business Manager:

David Lee (EPS Mulhouse)

Product Manager:

Zoe Anderson (IOPP Bristol)

Deputy Editors (2021):

Roberta Citro (Italy), Alessandra Lanotte (Italy), and J. Gonzalo Muga (Spain)

Deputy Editors (2022): David Guéry-Odelin (France), Alessandra Lanotte (Italy); Xiaojie Chen (China)

Data and Statistics

The Journal Impact Factor JIF (Web of science) for 2018, 2019 and 2020 is 1.886, 1.958, and 1,947 respectively, so that EPL's position in "Physics, Multidisciplinary" has been in these three years 37/81, 42/85, and 47/86. We are currently in Q3 (third quartile) which leads to a vicious circle of fewer submissions to lower JIF to fewer submissions. Improvements needed in all aspects as well as support from learned societies and researchers.

The number of manuscripts received continues a slow decay, see Fig. 1. The aim is to publish more Perspectives and Focus Issues.

Geographical origin: The tendency of previous years continued in 2021, is to receive more papers from Asia, see Fig. 2

have adapted the Journal to this trend by incorporating a Chinese Deputy Editor (DE).

Of the **referees** contacted in 2021 we only got a 45% of reports, surely a generalised problem, not EPL specific, but something to monitor and think about, see Fig. 3.

The submission-to-acceptance times have been very stable even in pandemic years, near 80 days since 2018 to 2021. However, the acceptance-to-online-publication time has suffered a bad increase due to change in protocols and workflow at SIF due to COVID. Measures have been taken to correct this and we expect improvements soon.

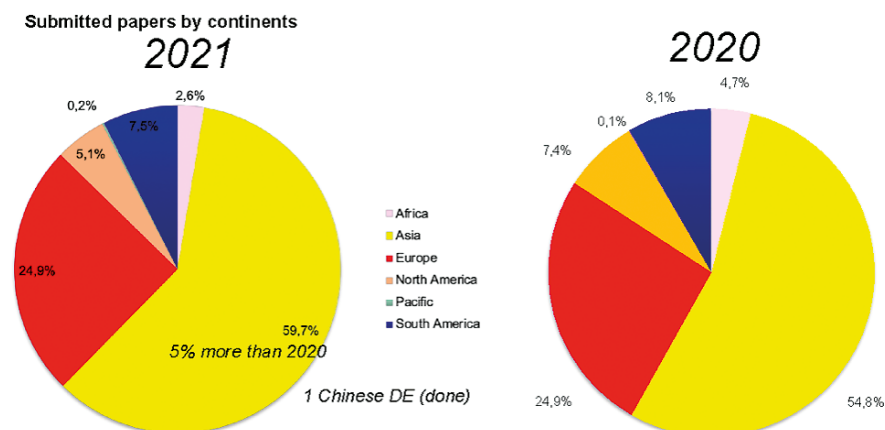
Co-editor changes: In March 2021, 13 Co-Editors (CE) left the Board and 12 were substituted <https://www.epleters.net/4dcgi/> (from April 2021, total of 62 CE, 25F+36M). In March 2022 13 CE leave the board and 12 are substituted (from April 2022 total of 61 CE, 25F+35M). We may have fewer CE as there are also fewer submissions. 8 among the new editors were proposed by stepping out Editors. 2 were selected by the EiC assisted by the Staff Editor, with a good EPL record. 2 more were suggested by the DE again with a good EPL record.

J. Gonzalo Muga is the new Editor in Chief since January 2022, after a four-year training as Deputy Editor. New team of Deputy Editors starting their terms in 2022. For the Editorial see <https://iopscience.iop.org/article/10.1209/0295-5075/ac381f>

Editorial developments

In 2021, many important editorial developments were carried out. These all contribute to the modernisation of the functioning and image of EPL. They include:

- **Change in editorial system.** In March 2021, ScholarOne went live as the new submission system of EPL, replacing the previous in-house system. S1 integrates up-to-date features such as automatic plagiarism checking using iThenticate and reviewer search using the Clarivate database. This change also allowed a closer integration with the IOPP systems.
- **Publication of accepted manuscripts.** With S1 integrated with the IOP production system, accepted manuscripts are now published online as soon as they are accepted. This is the version of the article that has been peer-reviewed and is accepted for publication. The accepted manuscript is attributed a DOI and is citable prior to final publication.
- **Transformative agreements.** Following a decision of the Board of Directors, EPL entered the transformative open access agreements (<https://publishingsupport.iopscience.iop.org/questions/institutional-open-access-agreements/>) (negotiated by IOP in 2021. This allows publication in open access in EPL for authors of a number of institutions and consortia, free of charge. With EPL



▲ Figure 1: Submissions, accepted and rejected

Referees contacted in 2021

	2015	2016	2017	2018	2019	2020	2021
No. of requests	6303	5859	5359	4922	3882	4131	4381
No. of reports	3218	3037	2629	2445	1860	1884	1969
No. of refusals	2146	1942	1848	1721	1287	1435	2046
No. of no replies	939	756	740	670	656	718	192
No. of no longer needed	153	124	142	86	79	94	174

Surely a generalized problem but something to think about

% reports	51%	52%	49%	50%	48%	46%	45%
% refusals	33%	33%	34%	35%	33%	35%	47%
% of no replies	14%	13%	14%	13%	17%	17%	4%
% of no longer needed	2%	2%	3%	2%	2%	2%	4%

▲ Figure 2: Distribution of submissions

participating in transformative agreements, it is also compliant with the requirements of funders (as part of Plan S (<https://www.coalition-s.org/>) in particular)

- **Replacement of the PACS system.** The outdated PACS classification system for manuscripts was replaced progressively throughout 2021. This was used for manuscript assignments, reviewer search, and in the publication of articles. The last step was completed in January 2022 with the switch to new Sections (<https://publishingsupport.iopscience.iop.org/journals/europhysics-letters/about-europhysics-letters/>) more adapted to the strengths and directions of EPL.
- **New Editorial Office webpages:** After some intense work at Mulhouse, on the air the 15/03/2022, <https://www.epleters.net>

Editorial strategy

In the last couple of years, we have put in action the editorial strategy decided by the Board of Directors at the end of 2019. The strategy aims to increase the JIF and thus reverse the decline in the number of high-quality articles submitted and published in the journal. It is based on increasing efforts in commissioning potentially high impact articles and collections of articles. Commissioning targets were set based on analyses of citations. A commissioning workflow was formalized, involving the Deputy Editors who send personalised invitations, and the staff Editor who prepares lists of potential authors and monitors the

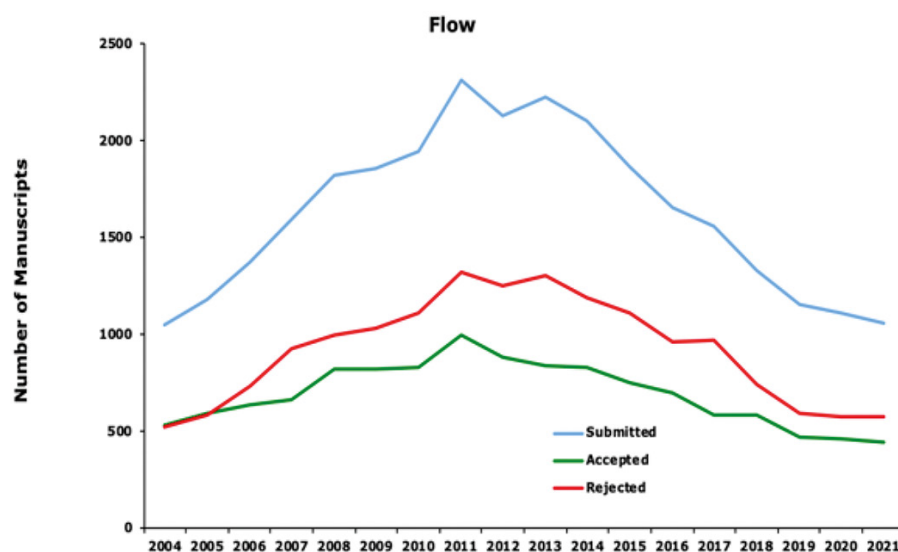
invitations. Supporting the editorial strategy is at the centre of the yearly marketing plans.

Perspectives. Perspective articles (<https://iopscience.iop.org/journal/0295-5075/page/Perspectives>) are short reviews, with the same length as regular Letters, and written for a broader audience. Perspectives aim to highlight the significance, impact, progress and wider implications of emerging research areas. They attract 2 or 3 times more citations per article than regular articles. Setting ambitious targets for the publication of Perspectives (45 in 2022) is thus expected to contribute to growing the impact factor. Perspectives: 35 published in 2021 versus 24 in 2020. We are currently awaiting manuscripts from 42 invitations with positive answer.

Focus Issues (FIs). FIs are collections of articles (<https://iopscience.iop.org/journal/0295-5075/page/Focus> Issues) in areas of interest identified by the Editorial Board. FIs contain invited papers and are edited by a team of Guest Editors including a member of the Editorial Board. While the first FIs published in 2017-18 were not more cited than regular articles, this is very dependent on the thematic, and recent collections have been more popular. The Board recently recommended a gradual increase in the number of FIs in potentially high impact fields, to a minimum of 2-3 per year. We are contacting the CE to receive FI proposals.

To do list (EiC) 2022

- EPS newsletter interview Feb 22
- Highlights 2021. Selection.
- New Editorial on Perspectives and Focus Issues (March)
- Meeting with 12 new Co-editors in April 7 and 8 (online)
- One additional Co-editor sectorial meeting in June (presential?)
- General Co-editor meeting in November, Bilbao (presential)
- Set panel to decide where to invest. E.g. intensify marketing?
- Set New Focus Issue(s) and protocol
- Perspectives Goal: 45 new (accepted) invitations in 2022
- Discuss if we need transfer protocols
- Set new collaboration with EPN based on selected topics.



▲ Figure 3: Referees contacted and answer

EUROPEAN JOURNAL OF PHYSICS (EJP)



Editor in Chief:
Mojca Čepič

**Publisher,
IOP Publishing:**
Jessica MacDonald

Executive summary

IOP Publishing is pleased to report to the Council a successful year for European Journal of Physics (EJP). There were several changes in the Publishing team. Jessica MacDonald has replaced Hannah Chapman in the role of Publisher and Kerenza Kerslake has replaced Jessica Thorn (Editor, IOPP) during her maternity leave.

The journal continues to deliver on its dual aims of supporting the growing field of physics education research and providing valuable resources for in-service educators – actively helping to foster improved collaboration where these two facets meet. We hold a steady position with both Western Europe and the US community and have seen greater engagement from communities in Central and South America.

Editorial activity

The editorial board continues to offer invaluable support to the journal, especially as we faced year two of Covid19; whether acting as Guest Editors for focus issues, contributing and commissioning high quality content, and promoting the journal at virtual conferences. We did not add to the editorial board in 2021 but aim to recruit new members in 2022, specifically those with specialties in astronomy, astrophysics, materials, quantum physics, and quantum mechanics.

In 2021, we completed three Spotlight and Focus on collections:

- **Spotlight on Nuclear Fusion**, Guest Edited by Julien Hillairet and Alf Köhn, highlighting the important work of scientists around the world in promoting the purpose of fusion research in schools and universities.

- **Focus on Modelling in Physics Instruction:** Guest Edited by David Sands, Eugenia Etkina, and Claudia Haagen-Schützenhöfe, focusing on modelling in physics and in the learning and teaching of physics.
- **Focus on Medical Physics:** Guest Editors Clive Baldock, Nina Reistad, Stephen Keevil, and Andrew Jirasek, highlighting the potential contribution medical physics has to physics education, sharing ideas, and setting out problems for future work.

We continued to publish articles in our ongoing Focus On Physics Competitions, Guest Edited by Angela Fösel, and hope that these articles will increase the awareness of the value of physics competitions in attracting young students to science.

In 2022 we will pursue further contributions to the collection Focus on Physics in Nature: Guest Editors Joseph A Shaw and Michael Vollmer, jointly published by Physics Education and European Journal of Physics. These contributions will help shape the teaching of physics in nature at high-school (Physics Education) and higher education level (Eur. J. Phys.) and serve as a scholarly resource for physics teachers of any kind.

At the 2021 Editorial Board Meeting, it was agreed that a new type of ‘Spotlight On’ series will be launched in EJP. Each series will feature four papers published as a collection in the same issue that can be taken directly to the classroom. The

four papers will cover the various stages of a particular topic: historic, front end, current position, and teaching at an intro level. The first of this series will be ‘Spotlight on Liquid Crystals’ (Editor Mojca Čepič). It was recommended that the ‘Spotlight On’ series starts with one collection per year.

EJP also published 2 Review articles in 2021: *An historical account of the two-fluid theory for superfluidity and Perspective: dusty plasma experiments—a learning tool for physics graduate students*. The commissioning of reviews continues to be an area of focus for the editorial board, and we hope to see the same high levels of submissions of this article type.

2020 was an exceptional year for submissions, but 2021 submissions remained strong, and we saw higher than average numbers in comparison to 2017-2019 (see table)

Overall article downloads figures showed a slight improvement on last year overall, with Open Access downloads increasing by 20%. We saw a small number of articles performing particularly well and as consistently high downloads across a greater number of articles. We will continue with our marketing approach of mixing tailored direct contact and direct social media interaction with an engaged audience: **In 2021: 53,659 Downloads of 2021 EJP content and 336,131 Total Downloads of all EJP content.**

Our highest performing articles were all

Geographic region	ORIGINAL SUBMISSIONS (BY RECEIVED YEAR)					ACCEPTANCES (BY FINAL DECISION YEAR)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Africa	44	46	65	47	53	2	1	3	2	3
Asia	225	229	247	364	291	22	25	23	53	45
Austral Asia	20	18	29	27	28	12	12	12	13	14
Cent/s. America	56	62	55	62	70	26	16	15	26	25
E. Europe	79	75	75	72	55	26	29	22	17	19
Middle East	83	78	84	97	85	5	12	8	10	10
N. America	127	141	106	132	124	48	60	33	67	41
UK	28	19	19	27	25	17	10	8	20	8
W. Europe	175	159	111	168	137	83	72	12	73	52

Article type	ORIGINAL SUBMISSIONS (BY RECEIVED YEAR)					ACCEPTANCES (BY FINAL DECISION YEAR)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Papers	767	774	754	941	823	206	200	156	247	203
Letters	15	17	5	0	0	0	0	0	0	0
Review	21	10	17	29	23	7	4	3	4	3
Special Issue / Focus on	14	17	9	9	10	14	19	4	9	2
Other	29	19	15	36	12	15	14	6	21	9
Total	846	837	800	1,015	868	242	237	169	281	217

published on an open access basis. In 2021, 15% of articles were published OA (across IOPP, 26% of all articles were published OA on IOPScience). IOP has reached agreements, sometimes known as transformative agreements with 242 institutions in 14 countries. These agreements help authors manage the cost of article publication charges (APCs) for open access publishing. These typically enable authors to publish on an open access basis at no cost to themselves. IOPP research shows that OA content is downloaded 80% more than paywalled content and cited 30% more, demonstrating the substantial benefits to publishing OA.

Marketing activity

European Journal of Physics has been marketed through a variety of channels over the last 12 months including email marketing, Targeted Google ads, and through the 'Education' portfolio. Over 6,000 site visits to EJP content came directly from marketing campaign links in 2021.

Education subject collection page

In 2020 we launched the 'Education' subject collection page to showcase the leading international journals supporting the physics education community, by assisting in improving the standard of taught physics at all levels, from schools through to universities. EJP is a leading journal on the page and content is updated throughout the year. Users are directed by social media, email, and advertising. In 2021 the page received over 3,900 views.

The subject collection can be found online at: <https://iopscience.iop.org/page/education>

2021 Highlights campaign (planned)

Our annual Highlights collection will return in 2022 and will feature outstanding papers from 2021. All articles in the collection are made free to read online until the end of the year and promoted via email to all IOPP Education contacts to help encourage usage and citation of this quality content.

Previous Highlights can be found online at: <https://iopscience.iop.org/journal/0143-0807/page/Highlights-of-2019>

TOP DOWNLOADED OF ALL EJP CONTENT IN 2021

ARTICLE TITLE	VOLUME	ISSUE	ONLINE DATE	DOWNLOADS
Beyond velocity and acceleration: jerk, snap and higher derivatives	37	6	13/10/2016	25,023
Stability of democracies: a complex systems perspective	40	1	27/11/2018	8,337
How online learning modules can improve the representational fluency and conceptual understanding of university physics students	36	4	10/06/2015	6,318
'The concept of information in physics': an interdisciplinary topical lecture	36	1	19/11/2014	4,842
Student understanding of Fermi energy, the Fermi-Dirac distribution and total electronic energy of a free electron gas	41	1	06/12/2019	3,626

TOP DOWNLOADED OF 2021 CONTENT

ARTICLE TITLE	VOLUME	ISSUE	ONLINE DATE	DOWNLOADS
Derivation of Jacobian formula with Dirac delta function	42	3	3/11/2021	2,125
Ball bouncing down rounded edge stairs: chaotic but tricky	42	3	3/10/2021	1,623
Natural number dynamics: reconstructing physics from generalized atomicity	42	2	2/3/2021	1,521
Three-body inertia tensor	42	5	8/3/2021	1,438
An extremely simplified optics laboratory for teaching the fundamentals of Fourier analysis	42	3	4/7/2021	1,268

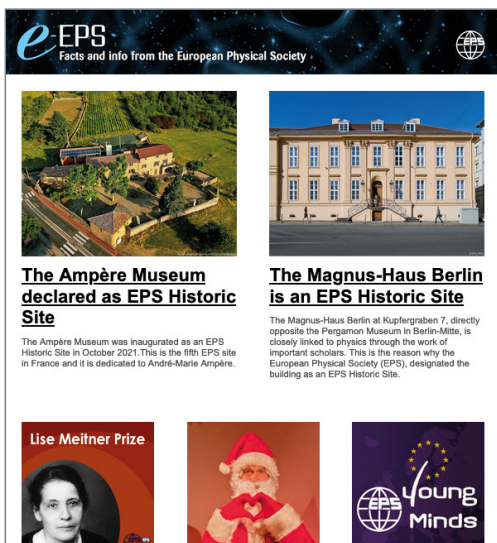
Conferences and events in 2021

In engaging with the community and interacting with target authors, we can maintain relationships, build confidence in researchers, and work on improving the journal profile. This interaction with the community is vital and plays a major role in our marketing plans and activities. However, the disruption caused to in-person conference attendance in 2020 by Covid19 continued in 2021. We look forward to returning to in-person meetings in 2022.

In conclusion

From the solid base of a high functioning publishing team, the European Journal of Physics continues to increase the impact of our quality and capitalize on steady growth. With the support of the editorial board and our Editor-in-Chief we hope to increase the commissioned content we publish in 2022 and beyond, exploring topics that continue to raise the journals profile and drive growth.

E-EPS



Editor: A. Bracco

Technical Editor : G. Gunaratnam

Overview since the creation in May 2011

The newsletter was created in the course of 2011. Since 2018, there is one less issue released per year, in July or August.

Overview for 2021

In May 2021, the EPS started to use a new mailing system (epsmail.org) for the Society's newsletter.

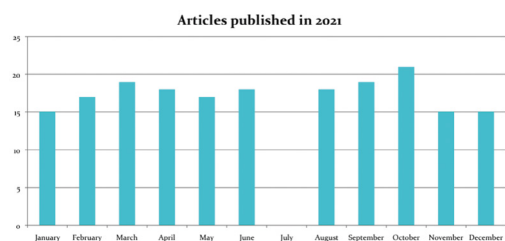
As in 2020, due to the crisis related to the pandemic, the newsletter was not sent out to subscribers anymore but publicised on the social media accounts of the EPS (LinkedIn, Twitter and Facebook) and on the EPS website (<https://www.eps.org>). In January 2021, a button called "Careers" with a link to the "Jobs classified" section of the EPN website was added at the bottom of the e-EPS issues.

Most read articles in 2021 (> than 100 visits)

On the blogs "EPS Activities", "Publications", "ESPD" (Solar Physics Division), "Women and Physics in the News" and "News" of the EPS website.

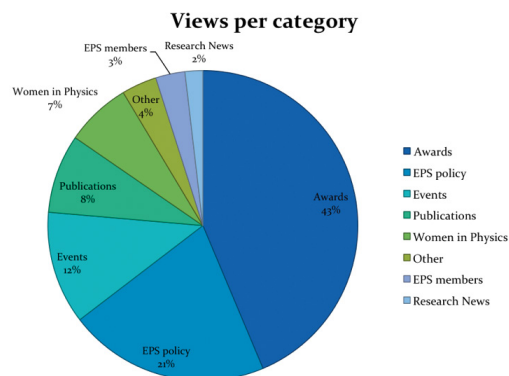
Articles published in 2021 every month

Number of articles published in each issue of e-EPS. In July 2021, no issue of e-EPS was published.



Distribution of articles per category

From the above list of articles on the blogs of the eps.org website (>100 views).



TITLE	IEWS
Job offer - Secretary General of the European Physical Society	378
Summer 2021 EPS Emmy Noether Distinction awarded to Sara Bolognesi	364
The 2021 EPS HEPP Prizes are announced	359
Call for the Lise Meitner Prize 2022	337
Launching the International Day of Light 2021	323
Call for nominations for the EPS Emmy Noether Distinction Winter 2021	308
2021 ESPD PhD Thesis and Early Career Researcher Prizes awarded	305
2020 IBA Europhysics Prize to the pioneer of ion beam cancer therapy Thomas Haberer	288
ESPD Media of the Month February 2021	281
News From Prizes	277
EPS Council 2020 Luc Bergé is the next EPS President Elect	260
Learning physics at an early age Children in Croatian Kindergartens Learning Quantum Physics Activities	259
The Conference on Plasma Physics EPS 2021	240
Call for nominations for the EPS Nuclear Physics Thesis Award	234
Call for nominations for the EPS Emmy Noether Distinction Summer 2021 deadline extended	196
The Charpak Ritz Prize 2021 is awarded to Marie Emmanuelle Couprie	191
The 2020 Update of the European Strategy for Particle Physics	173
EPWS woman scientist of the month	171
Women in Physics and the News	162
Joint Annual Meeting 2021 of the Austrian Physical Society and the Swiss Physical Society	155
Gender gap: Women represent two thirds of doctorates only one third of academic jobs	147
The City of Jena distinguished as EPS Historic Site	145
The State of Physics Teaching in Europe	131
Solar Physics Division	129
The April 2021 issue of e EPS is out	120
The Winter 2020 EPS Emmy Noether Distinction for Women in Physics is awarded to Maria Garcia Parajo	115
The June 2021 issue of e EPS is out	114
Jost Burgi Symposium 2021 of the Swiss Physical Society SPS	111
Job offer: Secretary General of the European Physical Society	110
School Project in Liechtensteiner Alps	109
Register now for PiA, Physics in Advent 2021	106
The September 2021 issue of e EPS is out	104
The EPS Alfvén Prize 2020 is awarded to Dr Annick Pouquet	101

Conferences Organised in 2021

CONFERENCE	PLACE	PARTICIPANTS	DIVISION/GROUP
EGAS52 ICPEAC	Virtual	289 600	Atomic, Molecular and Optical Physics
XXXII CCP Conference	Virtual	340	Computational Physics Group
Bound states in hybrid superconductor nanostructures, 28-29 June 2021 Recent advances in quantum thermodynamics with a focus on many-body interactions, 6 July 2021 Quantum matter at ultra-low temperatures, 20-21 July 2021 Recent developments in Gas Phase Synthesis of Nanoparticles, 15 September 2021 Large scale spectral simulations of Topological Matter and Disordered Materials, 4-5 October 2021 Spin control in twisted van der Waals heterostructures, 18-19 October 2021 LCM2021 (Localization in Condensed Matter), 17-18 November 2021 Advances in the Casimir force and heat transfer phenomena, 15 March 2022	Virtual		Condensed Matter Division
SIF-EPS Energy School	Virtual		Energy Group
ESPM16	Virtual	638	European Solar Physics Division
EPS-HEP, Virtual only, 26-30 July 2021	Virtual	1933	High Energy and Particle Physics
Applied Nuclear Physics Conference 2021, Prague	Hybrid	124	Nuclear Physics Division
EPS Plasma Physics	Virtual	726	Plasma Physics Division
CLEO/Europe EQEC 21	Virtual	1413	Quantum Electronics and Optics
3 rd EPS conference "Statistical Physics of Complex Systems"	Hybrid	250+500 on line	Statistical & Nonlinear Physics Division

Prizes Awarded in 2021

PRIZE	LAUREATE	DIVISION
Joint EPS QEOD_AMOPD Prize Letokhov	Massimo Inguscio	Accelerator Group
The EPS-CMD Liquid Matter Prize	Daan Frenkel	Accelerator Group
ESPD PhD Thesis Prize ESPD Early Career Researcher Prize ESPD Senior Prize	Camilla Scolini Daniel Nóbrega-Siverio Eric Priest	Accelerator Group
EPS High Energy and Particle Physics prize EPS-HEP, Giuseppe and Vanna Cocconi Prize EPS HEP Young Physicist Prizes Outreach Prizes Gribov Medal	Torbjörn Sjöstrand and Bryan Webber Borexino Collaboration Nathan Jurik and Ben Nachman Uta Bilow, Kenneth Cecire and Sascha Mehlhase Bernhard Mistlberger	Accelerator Group
PhD Prize	Jonas Kartheim, Agota Koszorus and Giuliano Giacalone	Condensed Matter Division
Alfvén Prize PhD Research Award	Sergei Igorevich Krasheninnikov Audrey Chatain, Alexandra Dudkovskaia, Mario Galletti and Andrea Pavone	Condensed Matter Division
EPS Statistical and Nonlinear Physics Prize 2021 EPS-SNPD Early Career Prize 2021	Albert-László Barabási and Angelo Vulpiani Federico Battiston and Caterina De Bacco	History of Physics
EPS Vladilen Letokhov Medal EPS QEOD Prize – Fundamental Fresnel Prize – Fundamental Fresnel Prize – Applied EPS/QEOD Thesis Prizes	Massimo Inguscio Miles Padgett Michael Zuerch Margherita Maiuri Renwen Yu, Paulo André Dias Gonçalves, Maxim Karpov and Felipe Ignacio Pedreros Bustos	Nuclear Physics Division

Atomic Molecular and Optical Physics Division**Chair:** Joachim Burgdörfer**Sections**

- Electronic and Atomic Collisions
- Chemical and Molecular Physics
- European Group on Atomic Systems

Conferences

- EGAS52
- ICPEAC XXXII

Prizes

- Joint QEOD-AMOPD Prize Letokhov

Website

- www.eps.org/eps-amopd

High Energy And Particle Physics Division**Chair**

- Mauro Mezzetto

Conference

- EPS-HEP, Virtual only, 26-30 July 2021

Prizes

- EPS-HEP
- Cocconi
- Young Physics and Outreach Prizes
- Gribov Medal

Website

- <http://eps-hepp.web.cern.ch/eps-hepp/>

Condensed Matter Division**Chair:** José María De Teresa**Sections**

- Liquids, Macromolecular Physics, Magnetism, Structural and Dynamical Properties of Solids
- Semiconductors and Insulators, Surfaces and Interfaces

Conferences

- LCM2021

Prize

- EPS-CMD Liquid Matter Prize

Website

- www.eps.org/eps-CMD

Nuclear Physics Division**Chair**

- Alison Bruce

Conferences

- Applied Nuclear Physics Conference 2021, Prague

Prizes

- IPhD Prize
- Lise Meitner Prize (Nuclear Science)

Website

- www.eps.org/group/NPD

Plasma Physics Division**Chair**

- Richard Dendy

Sections

- Beam Plasma and Inertial Fusion Section, Dusty and Low Temperature

Conference

- 47th Annual Conference postponed

Prizes

- EPS Alfvén Prize 2021
- Joint EPS-APS Landau-Spitzer Prize 2021

Website

- <http://plasma.ciemat.es/eps/>

Environmental Physics Division**Chair:** Johannes Orphal**Conferences**

- No conference organised in 2021

Website

- www.eps.org/group/EPD

Gravitational Physics Division**Chair**

- Mairi Sakellariadou

Conference

- No conference organised in 2021

Website

- www.eps.org/group/GPD

Physics Education Division**Chair**

- David Sands

Conference

- None postponed

Website

- www.eps.org/group/PED



European Physical Society

6, rue des Frères Lumière · 68200 Mulhouse · France
tel: +33 389 32 94 40 · fax: +33 389 32 94 49
website: www.eps.org
