



Center for Theoretical Physics of the Polish Academy of Science

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REPORT ON THE RESEARCH ACTIVITIES OF THE CENTRE FOR THEORETICAL PHYSICS PAS

in 2018

In 2018, the Centre for Theoretical Physics of the Polish Academy of Sciences (CTP PAS) was engaged in research activity in the following topics:

1. **Mathematical and cosmological aspects of the evolution of gravitational fields.**
2. **Quantum mechanics of non-linear and complex systems.**
3. **Physical foundations of information processing.**
4. **Thermodynamics and dynamics of mesoscopic quantum systems.**
5. **Dissipation in the many bodies system.**
6. **Studying space phenomena across a range of time scales.**
7. **High-energy astrophysics.**
8. **Science and society.**
9. **Cartan Connections and special contact geometries.**
10. **Topology and geometry in a quantum mechanics.**
11. **Using electrodynamics methods to describe gravitational waves.**
12. **Observational constraints on the properties of dark energy.**
13. **Mathematical and numerical general relativity and cosmology.**
14. **Self testing in complex quantum systems.**
15. **OTW testing and alternatives using cosmic density and galaxies velocity fields.**
16. **Optoelectronics and automation in studying the control and regulation of behavior using the methods of neuroengineering.**

In 2018, the scientific activities of the Centre's employees were carried out mainly within the framework of statutory activities and **20** domestic research projects financed by the **NCN** and the **Ministry of Science and Higher Education**, an additional **2** grants „*Bonus at the Horizon*” financed by the **Ministry of Science and Higher Education** and **5** foreign research projects. The Horizon 2020 European Union Framework Programme is the largest research and innovation programme in the history of the Union. In 2018, **two** POLONEZ scholarships, financed from [Horizon 2020](#) funds, were implemented in the CTP PAS. The project, called "*Special geometries*

related to the exceptional group G₂" is carried out by Dr Katja Sagerschnig in cooperation with Professor Paweł Nurowski, and the project entitled "Robust self-testing of quantum systems and device-independent uncertainty relations", carried out by Dr Jędrzej Kaniewski in cooperation with Professor Karol Życzkowski. CTP PAS is a beneficiary of a grant for the project named "Self-testing protocols for multipartite quantum states" in the FIRST TEAM Programme, which is a grant project of the Foundation for Polish Science (called HOMING/POWROTY) financed by the European Regional Development Fund.

Apart from that, the Centre's employees were the contractors of 2 research projects coordinated by another scientific institution.

CTP PAS has a scientific category **A**, which it received during the categorisation carried out in 2017.

The year 2018 was another year of the Centre scientific potential development. Using funds from grants to maintain research potential and from another grants, the Centre employed further researchers, assistant professors and assistants in open competitions. In 2018, the Centre employed **40.8** full-time equivalent employees, including **35.1** researchers.

In the competition for scientific projects implemented in 2018 at CTP PAS by young scientists under the direction of scientific supervisors, **6 prizes** were awarded.

In 2018, the Centre's employees published **68** scientific papers in peer-reviewed journals, including **49** papers in the most respected journals, including **11** in **Physical Review A**, **5** in **Astrophysical Journal**, **3** in **Physical Review Letters**, **2** in **Physical Review D** and **1** in **Science**. The Centre's staff also published **20** popular science and social publications or monographs. Several publications are also under review. In 2018, the Centre's staff gave **186** lectures at national and international scientific conferences and seminars and published **19** reports in conference materials.

Since 2014 CTP PAS has its own [YouTube channel](#), where recordings of seminars and lectures organized by CTP PAS are published. So far we have published **275** films, which have gathered over **200 thousand** viewings, and the channel itself already enjoys more than **1500** subscriptions. This form of informing the public about our current activities is related to the policy of openness and open access, practiced in our institute.

Cooperation with foreign scientific institutes plays a significant role in the Centre. In 2018, **32** scientific papers of the Centre's employees were published in international scientific journals, carried out together with scientists from foreign scientific institutions. As part of the cooperation with foreign countries, in 2018 the Centre's employees went on **108** short study visits abroad. In 2018, the Centre was visited by **28** foreign guests, and **5** foreigners (**12** foreigners in total work at the Centre) and **1** doctoral candidate were admitted to work at the Centre. In 2018, the Centre continuously cooperated without any agreement with **23** foreign scientific institutions, implementing **17** scientific topics within the framework of cooperation.

In 2018, the Centre co-organised **nine** international scientific conferences:

No.	Conference	Date	Other informations
1	COSPAR, Event E1.4,	<i>Pasadena, 14-22 June 2018</i>	COSPAR, SOC Symposium E1.4, foreign, 2000 in total, 100 persons in Symposium E1.4

2	Radio - Vis - IR Rzepiennik Meeting	<i>Rzepiennik Biskupi, 7-9.06.2018</i>	Queen Hedwig's Astronomical Observatory, National Centre for Nuclear Research, Jagiellonian University Astronomical Observatory, Nova Astronomy Association, LOC, national, 18 persons
3	Inhomogeneous Cosmologies III	<i>Cracow, 16-21.09.2018</i>	Faculty FAIS UJ, SOC, national, 37 persons
4	XII Winter school in Cosmology	<i>Passo del Tonale (Italy), 10-14/12/2018</i>	Heidelberg University, SOC, foreign, 37 persons
5	COSPAR, Event E1.4,	<i>Pasadena, 14-22 June 2018</i>	COSPAR, SOC, foreign, 80 persons
6	Workshop on Multipartite Entanglement	<i>Benasque, Spain 20-26 May 2018</i>	Benasque Science Center, co-organiser, foreign, 46 persons
7	Supercomputing Frontiers Europe 2018	<i>Warsaw, Poland, March 2018</i>	ICM UW, SOC, foreign, 100 persons
8	4-th International Summer Cosmology School in Cracow	<i>Cracow, Poland, 8-22 July, 2018</i>	UJ, SOC, co-organiser, foreign, 80 persons
9	Baby-Horizons in Mathematics – Winter School for Students	<i>Będlewo, Poland, 16.03.2018-18.03.2018</i>	IM PAS, co-organiser, national, ~55 persons

In 2018, the Centre continued the recruitment process for 1-3 month scientific internships for talented students of science faculties. Many talented students continue their scientific cooperation with CTP PAS, they are also employed as contractors in research projects carried out at the Centre.

In 2018, a large group of young physicists (**16** assistants) worked at the Centre on doctoral dissertations and **11** assistant professors on habilitation. During this period **three** CTP employees, Dr. Mikołaj Grzędzielski, Dr. Katarzyna Karnas and Dr. Tomasz Maciążek, obtained their doctoral degrees, and Dr. Remigiusz Augusiak received his doctoral degree with distinction.

The Centre for Theoretical Physics of the Polish Academy of Sciences participates together with the Institute of Physics of the Polish Academy of Sciences in the International Doctoral Studies. CTP has also signed an agreement which enables our employees to participate in doctoral studies conducted at the Nicolaus Copernicus Astronomical Centre of the Polish Academy of Sciences. Currently, **eleven** of our doctoral students take advantage of these opportunities, **nine** of them are undergoing doctoral studies conducted by IF PAS, and **two** at CAMK PAS.

The Centre is growing rapidly, unfortunately, the premises have forced us to rent additional rooms for our research groups at the Faculty of Electronics and Information Technology at the Warsaw

University of Technology.

In 2018 **two** children were born in the families of our employees.

The books most needed for the Centre's hand-held library are usually purchased from research projects. Starting from 2012, CTP resigned from the traditional subscription to paper magazines. Online access to large databases of scientific journals in electronic form was ensured thanks to the Centre's participation in consortia, as well as thanks to the nationwide Virtual Library of Science, financed since 2010 by the Ministry of Science and Higher Education. The list of foreign journals available to the Centre's employees in electronic version in 2018 as part of a consortium agreement involving the American Physical Society and American Institute of Physics included **20** titles. The Centre has a local computer network and high speed internet access, which is nowadays essential for scientific work. The computer base is systematically renewed and modernized.

The Centre is an active member of the National Centre for Quantum Informatics (NCQI) in Gdańsk. Apart from CTP PAS, NCQI consists of Gdansk University of Technology, University of Gdansk, Adam Mickiewicz University in Poznan, Jagiellonian University, University of Lodz, Nicolaus Copernicus University in Torun and University of Wrocław.

CTP PAS employees are members of many scientific councils, committees and other scientific organizations. For example, Prof. Marek Kuś is a member of the Scientific Councils of the Institute of Physics of the Polish Academy of Sciences, the Institute of Social Studies of the University of Warsaw, the Institute of Theoretical Physics of the University of Warsaw, Chairman of the Scientific Council of the National Quantum Information Centre in Gdańsk, editor of the International Journal of Quantum Information and a member of the editorial committee of Reports on Mathematical Physics, Journal of Physics B and Open Systems and Information Dynamics magazines. Professor Karol Życzkowski is a member of the editorial committee of Open Systems and Information Dynamics. He is also a member of the Scientific Council of KL FAMO, chairman of the Scientific Council of the Centre for Quantum Engineering of Atoms and Light and a member (fellow) of the American Physical Society (APS) and the British Physical Society (IOP). Professor Bożena Czerny is the editor of The Astrophysical Journal and a representative of Poland in COST Action TD1403 Big Data Era in Sky and Earth Observation. Professor Lech Mankiewicz is a member of the Programme Council of the Science Festival. In total, the Centre's employees participate in the work of **58** Scientific Councils, Editorial Committees and Expert Teams.

No.	Person	Membership type
1	Bożena Czerny	<i>Editorial Board of the American Astronomical Journals</i> , appointment year: 2011, function: Scientific Editor, roles: selection of reviewers, supervision of the reviewing and proofreading stage, decision to accept

		the paper for publication in the Astrophysical Journal, Astrophysical Journal Supplement Series or Astronomical Journal or to reject the paper.
2	Bożena Czerny	Delta popular-scientific journal, year of establishment: 2009, function: member of the Editorial Committee, tasks: meetings twice a year, participation in the discussion on the level of the journal and directions of further development.
3	Bożena Czerny	<i>Polish Astronomical Society</i> , year of establishment: 1979, function: member, tasks: participation in PTA meetings
4	Bożena Czerny	<i>European Astronomical Society</i> , year of formation: Function: Member, tasks: participation in EWASS Annual Conference and General Assembly.
5	Bożena Czerny	<i>Astronomy Committee of the Polish Academy of Sciences</i> , function: member, tasks: participation in meetings
6	Bożena Czerny	<i>Polish Astronomy Foundation</i> , year of its establishment: 2018, function: member of the Foundation Council, tasks: participation in the meeting, evaluation of the Board's work, including the adoption of the Board's report
7	Bożena Czerny	<i>NCN Expert PASel</i> , function: member, chairperson of ST2 PASel, tasks: evaluation of research projects, in case of chairperson assignment of proposals to experts
8	Kazimierz Rzążewski	<i>OPI Scientific Council</i> , year of appointment: 2016, function: member, tasks: participation in meetings, representation of the Minister of Science
9	Kazimierz Rzążewski	<i>KL FAMO Scientific Council</i> , year of establishment: 2000, function: member, tasks: attendance at meetings, representation of the CTP
10	Kazimierz Rzążewski	<i>EPP Editorial Committee</i> , year of appointment: 2013-2018, function: co-editor, tasks: selection of reviewers, decisions about accepting or rejecting works
11	Kazimierz Rzążewski	<i>PE2 PASel of the ERC-starting grants programme</i> , year of establishment: 2010, function: expert, tasks: issuing opinions on scientific projects
12	Kazimierz Rzążewski	<i>WAT expert team</i> , year of appointment: 2016, function: member, tasks: physics teaching consultant at the university
13	Kazimierz Rzążewski	<i>American Physical Society - APS</i> , year of formation: 2000, function: fellow, tasks: elected member
14	Kazimierz Rzążewski	<i>British Physical Society of the ILO</i> , year of formation: 2000, function: fellow, tasks: elected member
15	Łukasz Rudnicki	<i>Advisory PASel of Journal of Physics A</i> , year of appointment: 2018, function: fellow, tasks: support for editors of the journal
16	Remigiusz Augusiak	<i>NCN Expert Team</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
17	Remigiusz Augusiak	<i>FNP Expert Team</i> , year of establishment: 2018, function: member, tasks: evaluation of research projects
18	Marek Kuś	<i>NCN Expert Team</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
19	Marek Kuś	<i>Interdisciplinary team for cooperation with foreign countries of the Ministry of Science and Higher Education</i> , year of establishment: 2015, function: member, tasks: evaluation of research projects
20	Marek Kuś	<i>Evaluation Team of the National Academic Exchange Agency</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
21	Marek Kuś	<i>European Research Council Advanced Grants evaluation PASel</i> , year of appointment: 2018, function: member, tasks: evaluation of research

		projects
22	Marek Kuś	<i>Scientific Council of the Institute of Theoretical Physics of the University of Warsaw</i> , year of establishment: 2008, function: member, tasks: attendance at meetings
23	Marek Kuś	<i>Scientific Council of the Institute of Physics of the Polish Academy of Sciences</i> , year of establishment: 2003, function: member, tasks: attendance at meetings
24	Marek Kuś	<i>Scientific Council of the Institute of Social Studies at the University of Warsaw</i> , year of establishment: 1993, function: member, tasks: attendance at meetings
25	Marek Kuś	<i>Scientific Council of the National Centre for Quantum Informatics in Gdańsk</i> , year of establishment: 2007, Function: Chairman, Tasks: Directing meetings
26	Marek Kuś	<i>Scientific Council of the Institute of Mathematics of the Polish Academy of Sciences</i> , year of establishment: 2018, function: member, tasks: attendance at meetings
27	Marek Kuś	<i>Reports on Mathematical Physics</i> , year of appointment: 2006, function: member of the Editorial Committee, tasks: participation in meetings
28	Marek Kuś	<i>Open Systems and Information Dynamics</i> , year of establishment: 2007, function: member of the Editorial Committee, tasks: participation in meetings
29	Marek Kuś	<i>International Journal of Quantum Information</i> , year of appointment: 2010, Function: Editor, Jobs: Selection of reviewers, decision making on acceptance for printing
30	Karol Życzkowski	<i>Council of the Centre for Theoretical Physics of the Polish Academy of Sciences</i> , year of establishment: 1999, function: member, tasks: attendance at meetings
31	Karol Życzkowski	<i>Council of the National Centre for Quantum Computer Science</i> , year of establishment: 2007, function: member, tasks: attendance at meetings
32	Karol Życzkowski	<i>Council of the Faculty of Physics, Astronomy and Applied Informatics of the Jagiellonian University</i> , year of appointment: 1994, function: member, tasks: attendance at meetings
33	Karol Życzkowski	<i>Editorial Board of "Open Systems and Information Dynamics" magazine</i> , year of appointment: 2003, function: member of the Editorial Committee, tasks: participation in meetings
34	Karol Życzkowski	<i>Academia Europea</i> , year of establishment: 2014, function: member, tasks: attendance at meetings
35	Karol Życzkowski	<i>Council of the Institute of Theoretical and Applied Informatics of the Polish Academy of Sciences</i> , year of establishment: 2015, function: member, tasks: attendance at meetings
36	Karol Życzkowski	<i>Editorial Board of Quantum magazine</i> , year of appointment: 2017, function: member of the Editorial Committee, tasks: participation in meetings
37	Jerzy Kijowski	<i>Magazine Acta Physica Polonica A</i> , function: member of the Editorial Committee, tasks: participation in meetings
38	Jerzy Kijowski	<i>Journal of Geometry and Physics</i> , function: member of the Editorial Committee, tasks: participation in meetings
39	Jerzy Kijowski	<i>Magazine Reports on Mathematical Physics</i> , function: member of the Editorial Committee, tasks: participation in meetings
40	Jerzy Kijowski	<i>Scientific Council of the Institute of Mathematics of the Polish Academy of Sciences</i> , function: member of the Council, tasks: participation in meetings

41	Lech Mankiewicz	<i>CTP PAS Scientific Council</i> , year of appointment: 2001, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96 item 619).
42	Lech Mankiewicz	<i>CAMK PAS Scientific Council</i> , year of appointment: 2013, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96, item 619).
43	Lech Mankiewicz	<i>Scientific Council of the National Centre for Quantum Informatics in Gdańsk</i> , year of establishment: 2011, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96 item 619).
44	Lech Mankiewicz	<i>Programme Council of the Science Festival</i> , year of establishment: 2013, function: member of the Council, tasks: participation in decision-making on organizational and programmatic matters of the Science Festival in Warsaw
45	Lech Mankiewicz	<i>Council of the Open Science Foundation (IBB PAS)</i> , year of establishment: 2014, function: Member of the Council, tasks: Supervision of the day-to-day operations of the FNO, approval of technical reports
46	Lech Mankiewicz	<i>Expert Corps of the National Science Centre</i> , year of establishment: 2016, function: member, tasks: evaluation of research grant applications, participation in review PASels
47	Agnieszka Janiuk	<i>Delta - editorial committee</i> , year of appointment: 2009, function: member, tasks: substantive monitoring of the journal; constant contact with the Editorial Office and assistance in searching for interesting topics and acquiring authors; participation in meetings of the Committee and selection of an article nominated for the Dean's Award.
48	Agnieszka Janiuk	<i>Polish Astronomical Society</i> , year of establishment: 2003, function: member, tasks: participation in discussions and informal collegiate initiatives of PTA; participation in the Assembly and General Assembly of Members; undertaking and issuing opinions on initiatives related to the promotion and popularization of astronomy in Poland.
49	Agnieszka Janiuk	<i>European Astronomical Society</i> , year of establishment: 2016, function: member, tasks: Participation in EWASS symposium, co-creation of the programme, proposing thematic scientific sessions; participation in informal peer discussions, undertaking and giving opinions on initiatives related to the popularization and promotion of astronomy in Europe.
50	Agnieszka Janiuk	<i>International Astronomical Union</i> , year of establishment: 2006, function: member, duties: Participation in the IAU Assembly; participation in the General Assembly of Members and informal peer discussions on the promotion and popularization of astronomy worldwide and the role of women in science; participation in votes on astronomical names; participation in sessions and meetings related to High Energy

		Astrophysics (Division D).
51	Agnieszka Janiuk	<i>CTP PAS Scientific Council</i> , year of appointment: 2011, function: member, tasks: participation in meetings of the Council and discussions on current CTP problems; participation in the committees for the doctoral dissertation.
52	Agnieszka Janiuk	<i>Expert Corps of the National Science Centre</i> , year of establishment: 2013, function: member, tasks: participation in Review PASels, evaluation of grant applications and project completion reports, in ST9 and ST PASels.
53	Agnieszka Janiuk	<i>Astronomy Committee of the Polish Academy of Sciences</i> , year of establishment: Function: member, tasks: participation in KA PAS meetings and e-mail discussions on topics related to the development of astronomy in Poland; providing opinions and taking initiatives to promote Polish science.
54	Wojciech Hellwing	<i>Polish Astronomical Society</i> , year of establishment: 2016, function: member, from 2017 member of the Board, tasks: participation in the works of the Board of PTA, organization of popular science stands, participation in the Young PTA Awards Committee, participation in the organizational works of the PTA Congress 2019, editing and writing grant applications of the DUN, assistance in editing post-conference materials, and others.
55	Wojciech Hellwing	<i>Międzynarodowa Unia Astronomiczna</i> , rok powołania: 2018, funkcja: młody członek, zadania: członek wydziałów: Division B Facilities, Technologies and Data Science, Division C Education, Outreach and Heritage, Division D High Energy Phenomena and Fundamental Physics, Division H Interstellar Matter and Local Universe, Division J Galaxies and Cosmology
56	Piotr Waluk	<i>Main Committee of the Physical Olympics</i> , year of establishment: 2016, function: member, tasks: participation in meetings, assistance in the organisation of the various stages of the Olympics, including the preparation and evaluation of competition tasks.
57	Oskar Słowik	<i>Polish Physical Society</i> , year of establishment: 2013, function: member, tasks: none
58	Jerzy Kijowski	<i>Programme Council of the Centre for Advanced Studies of the Warsaw University of Technology</i> , year of establishment: 2015, function: member of the Council, tasks: participation in decision-making on programme matters

Scientists from the Centre took part in the popularization of physical knowledge. A lot of information about previous educational and popularization initiatives of the Centre can be found on the our website <http://www.cft.edu.pl/edu/>.

As part of the 22nd Science Festival in Warsaw, CTP PAS employees organized a festival session on 22 September 2018, during which three lectures were delivered.

Dr. hab. Lech Mankiewicz is the coordinator of the translation of KhanAcademy resources in Polish. Thanks to funds obtained from the PKO Bank Polski Foundation, the Orange Foundation, private donors and voluntary work, the Khan Academy Polish resources comprise over **3500** films

from various fields of knowledge, unveiled over **15 million** times in total, and 90% of the portal dedicated to mathematics, where over the past year **1.65 million** users had **2.85 million** sessions, during which over **11 million** tasks were solved. The best materials include films about biology, chemistry and physics as well as interactive programming materials. CTP PAS employees actively participate in the development of resources in the field of physics. In cooperation with the Junior Mathematical Olympics we also discuss mathematical education.

Organizing national eliminations for the international competition for young scientists "*Falling Walls Lab*". The elimination took place on 22 September 2018. The event was noticed in many social media portals and media.

Traditionally, CTP also took part in the Science Picnic, which was created in 1997 thanks to the initiative and ideas of our employee, Professor Łukasz Turski. Last year, this huge mass event took place for the 22nd time at the National Stadium in Warsaw on 09.06.2018. CTP PAS organized a stand together with the Polish Astronomical Society.

Report adopted by the Scientific Council of CTP PAS on 1 March 2019.

List of research projects implemented in CTP PAS in 2018.

Projects financed or co-financed by the National Science Centre

Project	Project	Implementation period	Funding
title	manager	(year) from-to	institution
1) Reconstruction of geometry from distributed data	Prof. Iwo Białyński-Birula	2013 – 2018	NCN
(2) Astrophysics of processes around compact space objects	dr hab. Agnieszka Janiuk, Prof. CTP PAS	2013 – 2018	NCN
3) Control and regulation of neuroengineering behaviour	Prof. Andrzej Wróbel, (Institute of Experimental Biology of the Polish Academy of Sciences) Coordinator at CTP PAS – dr hab. Lech Mankiewicz, Prof. CTP	2013 - 2019	NCN

	PAS		
4. Decorative treatment of non-Gaussian states	Dr hab. Łukasz Rudnicki	2015 - 2018	NCN
(5) Entanglement and decoherence of ultrasound atoms	Dr Krzysztof Pawłowski	2015 - 2018	NCN
(6) Main sequence of quasars	Prof. Bożena Czerny	2016 - 2019	NCN
(7) Optimality, versatility and controllability in quantum calculation theory	Dr hab. Adam Sawicki, Prof. CTP PAS	2016 - 2021	NCN
(8) Uncertainty relationships and quantum entanglement	Prof. Karol Życzkowski, (UJ)	2016 - 2021	NCN
(9) Dynamics of quantum gases	Prof. Kazimierz Rzążewski	2016 - 2019	NCN
(10) Stellar populations of giant radio sources	Dr Agnieszka Kuźmicz. Scientific Supervisor Prof. Bożena Czerny	2016 – 2019	NCN
11) Stability of the starting point for Einstein equations: classical and quantum aspects	Prof. dr hab. Jerzy Kijowski	2017-2020	NCN
(12) Systems of several dipole atoms in a harmonic trap	mgr Rafał Ołdziejewski	2017-2019	NCN
13) Local relativistic calculus of disturbances in the hydrodynamics of general relativity theory and its application in cosmology	Dr hab. Mikołaj Korzyński, Prof. CTP PAS	2017-2021	NCN
(14) Hyperaccretion of matter to a black hole	Dr hab. Agnieszka Janiuk, Prof. CTP PAS	2017-2020	NCN
(15) Groups of homology of configuration spaces for particles on graphs	Dr Tomasz Maciążek	2017-2019	NCN
16) Topology of configuration spaces for particles on graphs	Dr Tomasz Maciążek	2017-2018	NCN
17) Special geometries related to the exceptional group G_2	Dr Katja Sagerchnig	2018-2019	NCN
(18) Restrictions on dark energy properties based on observations of active galaxies	Prof. Bożena Czerny	2018-2023	NCN
19) Quantum-classical transition. New problems	Prof. Marek Kuś	2018-2021	NCN

and test methods			
20) Robust self-testing of quantum systems and device-independent uncertainty relations	Dr Jędrzej Kaniewski	2018-2019	NCN
<p>Other projects: projects financed or co-financed by the Ministry of Science and Higher Education under the previously binding rules of financing science, projects financed by other national organisations, projects financed by foreign entities/institutions, other projects.</p>			
1) Non-locality in Multipartite Quantum Systems	Dr hab. Remigiusz Augusiak – Scientific Supervisor Prof. dr hab. Marek Kuś	2016 - 2018	European Commission – Marie Skłodowska-Curie Individual Fellowships
2) Dance of galaxies: testing General Relativity and alternatives using galaxy velocity fields	Dr Wojciech Hellwing – Scientific Supervisor Prof. dr hab. Bożena Czerny	2017-2019	European Commission – Marie Skłodowska-Curie Individual Fellowships
3) Andrzej Trautman and the Golden Age of Theory of Relativity	Prof. dr hab. Paweł Nurowski	2017-2018	MNiSW
(4) Bonus at the Horizon for the ' <i>Non-locality in Multipartite Quantum Systems</i> ' project	Dr hab. Remigiusz Augusiak	2017-2018	MNiSW
(5) Examination of multi-cubit maximally tangled states and equivalence of states with regard to SLOCC operation	Dr Tomasz Maciążek	2014 - 2018	MNiSW
6) Bonus at the Horizon for the project " <i>Dance of galaxies: testing General Relativity and alternatives using galaxy velocity fields</i> "	Dr Wojciech Hellwing	2018-2019	MNiSW
7) Self-testing protocols for multipartite quantum states.	Dr hab. Remigiusz Augusiak	2018-2021	FNP

List of research projects located outside the CTP in which CTP PAS employees participated as project contractors

Contractors with CTP PAS	Subject	Manager (unit)	
Dr hab. Lech Mankiewicz, Prof. CTP PAS	<i>Control and regulation of behavior using the methods of neuroengineering</i>	Prof. A. Wróbel IBD im. NENCKIEGO	2013-2019

List of publications of CTP PAS employees in 2018

Publications in journals from list A of the Ministry of Science and Higher Education

No.	Authors	Title	Journal
1	Daniel Tasca, Piero Sanchez, Stephen Walborn, Lukasz Marek Rudnicki	<i>Mutual Unbiasedness in Coarse-Grained Continuous Variables</i>	PHYSICAL REVIEW LETTERS, 2018, v. 120, p. 40403, https://doi.org/10.1103/PhysRevLett.120.040403
2	Katarzyna Karnas, Adam Sawicki	<i>When is a product of finite order qubit gates of infinite order?</i>	Journal of Physics A-Mathematical and Theoretical, 2018, v. 51, https://doi.org/10.1088/1751-8121/aa91db
3	Tomasz Maciążek, Adam Sawicki	<i>Asymptotic properties of entanglement polytopes for large number of qubits</i>	Journal of Physics A-Mathematical and Theoretical, 2018, https://doi.org/10.1088/1751-8121/aaa4d7
4	Jianwei Wang, Stefano Paesani, Yunhong Ding, Raffaele Santagati, Paul Skrzypczyk, Alexia Salavrakos, Jordi Tura, Remigiusz Augusiak , Laura Mančinska, Davide Bacco, Damien Bonneau, Joshua Silverstone, Qihuang Gong, Antonio Acin, Karsten Rottwitt, Leif Oxenløwe, Jeremy O'Brien, Anthony Laing, Mark Thompson	<i>Multidimensional quantum entanglement with large-scale integrated optics</i>	Science, 2018, v. 360, p. 285-291, https://doi.org/10.1126/science.aar7053

5	Tomasz Radożycki, Piotr Bargieła	<i>Limitations in the 2D description of the electromagnetic waves propagation in thin dielectric and magnetic layers</i>	Journal of Modern Optics, 2018, v. 65, p. 1404-1415, https://doi.org/10.1080/09500340.2018.1440650
6	Remigiusz Augusiak , Maciej Demianowicz, Jordi Tura	<i>Constructing genuinely entangled multipartite states with applications to local hidden variables and local hidden states models</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 12321, https://doi.org/10.1103/PhysRevA.98.012321
7	Maciej Demianowicz, Remigiusz Augusiak	<i>From unextendible product bases to genuinely entangled subspaces</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 12313, https://doi.org/10.1103/PhysRevA.98.012313
8	Ivan Šupić, Andrea Coladangelo, Remigiusz Augusiak , Antonio Acin	<i>Self-testing multipartite entangled states through projections onto two systems</i>	NEW JOURNAL OF PHYSICS, 2018, v. 20, p. 83041, https://doi.org/10.1088/1367-2630/aad89b .
9	Eloisa Bentivegna, Timothy Clifton, Jessie Durk, Mikołaj Korzyński , Kjell Rosquist	<i>Black-hole lattices as cosmological models</i>	CLASSICAL AND QUANTUM GRAVITY, 2018, v. 35, p. 175004, https://doi.org/10.1088/1361-6382/aac846
10	Roberto Grimauudo, A. M. S. de-Castro, Marek Kuś , Antonino Messina	<i>Exactly solvable time-dependent pseudo-Hermitian $su(1,1)$ Hamiltonian models</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 33835, https://doi.org/10.1103/PhysRevA.98.033835
11	Conor Patrick Wildy , Bożena Jadwiga Czerny , Agnieszka Olga Kuźmich	<i>Mg II Line Properties in Lobe-dominated Quasars</i>	ASTROPHYSICAL JOURNAL, 2018, v. 861, p. 54, https://doi.org/10.3847/1538-4357/aac5ed
12	Adam Sawicki , Tomasz Maciążek , Katarzyna Karnas , Katarzyna Ludwika Kowalczyk-Murynka , Marek Kuś , Michał Oszmaniec	<i>Multipartite Quantum Correlations: Symplectic and Algebraic Geometry Approach</i>	REPORTS ON MATHEMATICAL PHYSICS, 2018, v. 82, p. 81-111, https://doi.org/10.1016/S0034-4877(18)30072-7
13	Rafał Ołdziejewski , Wojciech Górecki , Kazimierz Maria Rzążewski , Krzysztof Pawłowski	<i>Many-body solitonlike states of the bosonic ideal gas</i>	PHYSICAL REVIEW A, 2018, v. 97, p. 63617, https://doi.org/10.1103/PhysRevA.97.063617
14	Rafał Ołdziejewski , Wojciech Górecki , Krzysztof Pawłowski , Kazimierz Maria Rzążewski	<i>Roton in a few-body dipolar system</i>	NEW JOURNAL OF PHYSICS, 2018, v. 20, p. 123006, https://doi.org/10.1088/1367-2630/aaf295
15	Krzysztof Aleksander Jachymski, Rafał Ołdziejewski	<i>Nonuniversal beyond-mean-field properties of quasi-two-dimensional dipolar Bose gases</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 43601, https://doi.org/10.1103/PhysRevA.98.043601

16	Bożena Jadwiga Czerny , Rachael Beaton, Michał Stanisław Bejger, Edward Cackett, Massimo Dall'Ora, R. F. L. Holanda, Joseph B. Jensen, Saurabh W. Jha, Elisabeta Lusso, Takeo Minezaki, Guido Risaliti, Maurizio Salaris, Silvia Toonen, Yuzuru Yoshi	<i>Astronomical Distance Determination in the Space Age. Secondary distance indicators.</i>	Space Science Reviews, 2018, https://doi.org/10.1007/s11214-018-0466-9
17	Janusz Grabowski, Marek Kuś , Giuseppe Marmo, Tatiana Shulman	<i>Geometry of quantum dynamics in infinite-dimensional Hilbert space</i>	JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL, 2018, v. 51, p. 165301, https://doi.org/10.1088/1751-8121/aab289
18	Tek Prasad Adhikari, Krzysztof Hryniewicz, Agata Antonina Różańska, Bożena Jadwiga Czerny , Gary J. Ferland	<i>Intermediate-line Emission in AGNs: The Effect of Prescription of the Gas Density</i>	ASTROPHYSICAL JOURNAL, 2018, v. 856, p. 78, https://doi.org/10.3847/1538-4357/aab350
19	Wojciech Hellwing , Maciej Andrzej Bilicki , Noam Libeskind	<i>Uneven flows: On cosmic bulk flows, local observers, and gravity</i>	Physical Review D, 2018, p. 103519, https://doi.org/10.1103/PhysRevD.97.103519
20	Marzena Śniegowska , Bożena Jadwiga Czerny , Bei You, Swayamtrupta PASda , Jian-Min Wang, Krzysztof Hryniewicz, Conor Patrick Wildy	<i>The properties of active galaxies at the extreme of eigenvector 1</i>	Astronomy AND Astrophysics, 2018, https://doi.org/10.1051/0004-6361/201730433
21	Iwo Białynicki-Birula , Zofia Białynicka-Birula	<i>Quantum numbers and spectra of structured light</i>	PHYSICA SCRIPTA, 2018, v. 93, p. 104005, https://doi.org/10.1088/1402-4896/aadbfe
22	Dariusz Patryk Kajtoch, Krzysztof Pawłowski , Emilia Witkowska	<i>Metrologically useful states of spin-1 Bose condensates with macroscopic magnetization</i>	PHYSICAL REVIEW A, 2018, v. 97, p. 23616, https://doi.org/10.1103/PhysRevA.97.023616
23	Mikołaj Korzyński , Jarosław Maciej Kopiński	<i>Optical drift effects in general relativity</i>	JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS, 2018, v. 2018, p. 012, https://doi.org/10.1088/1475-7516/2018/03/012
24	Paweł Krzysztof Nurowski , Krzysztof Antoni Meissner, Daniel An	<i>Ring Type Structures in the Planck map of the CMB</i>	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, 2018, v. 473, p. 3251–3255,

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25	Tomasz Ignacy Tylec, Marek Kuś	<i>Ignorance is a bliss: Mathematical structure of many-box models</i>	Journal of Mathematical Physics, 2018, v. 59, p. 32202, https://doi.org/10.1063/1.5027205
26	Denis Dobkowski-Ryłko, Jerzy Krzysztof Lewandowski, Tomasz Henryk Pawłowski	<i>Local version of the no-hair theorem</i>	Physical Review D, 2018, v. 98, p. 43435, https://doi.org/10.1103/PhysRevD.98.024008
27	Denis Dobkowski-Ryłko, Jerzy Krzysztof Lewandowski, Tomasz Henryk Pawłowski	<i>The Petrov type D isolated null surfaces</i>	CLASSICAL AND QUANTUM GRAVITY, 2018, v. 35, p. 11689, https://doi.org/10.1088/1361-6382/aad209
28	Mehdi Assanioussi, Andrea Dapor, Klaus Liegener, Tomasz Henryk Pawłowski	<i>Emergent de Sitter Epoch of the Quantum Cosmos from Loop Quantum Cosmology</i>	PHYSICAL REVIEW LETTERS, 2018, v. 121, p. 43252, https://doi.org/10.1103/PhysRevLett.121.081303
29	Agnieszka Olga Kuźmicz , Marek Jamrozy, Katarzyna Renata Bronarska, Katarzyna Boczar-Janda, Dhruba Saikia	<i>An Updated Catalog of Giant Radio Sources</i>	ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 2018, v. 238, p. 9, https://doi.org/10.3847/1538-4365/aad9ff
30	Iwo Białynicki-Birula , Szymon Charzyński	<i>Trapping and Guiding Bodies by Gravitational Waves Endowed with Angular Momentum</i>	PHYSICAL REVIEW LETTERS, 2018, v. 121, p. 171101, https://doi.org/10.1103/PhysRevLett.121.171101
31	Ion Nechita, Zbigniew Puchała, Łukasz Paweł, Karol Życzkowski	<i>Almost all quantum channels are equidistant</i>	Journal of Mathematical Physics, 2018, v. 59, p. 52201, https://doi.org/10.1063/1.5019322
32	Gopal Bhatta, Łukasz Stawarz, A. Markowitz, K. Balasubramaniam, Stanisław Zoła, Andrzej Antoni Zdziarski, Marek Jamrozy, Michał Ostrowski, Agnieszka Olga Kuźmicz , Waldemar Ogłóza, M. Drózdź, M. Siwak, Dorota Kozieł-Wierzbowska, Bartłomiej Dębski, Tomasz Kundera, Grzegorz Stanisław Stachowski, J. Machalski, V.S. Paliya, D.B. Caton	<i>Signatures of the Disk–Jet Coupling in the Broad-line Radio Quasar 4C+74.26</i>	ASTROPHYSICAL JOURNAL, 2018, v. 866, p. 132, https://doi.org/10.3847/1538-4357/aade9c
33	Swayamtrupta PASda ,	<i>Modeling of the Quasar Main</i>	ASTROPHYSICAL

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34	Konrad Szymański, Stephan Weis, Karol Życzkowski	<i>Classification of joint numerical ranges of three hermitian matrices of size three</i>	LINEAR ALGEBRA AND ITS APPLICATIONS, 2018, v. 545, p. 148-173, https://doi.org/10.1016/j.laa.2017.11.017
35	Kamil Korzekwa, Stanisław Czachórski, Zbigniew Puchała, Karol Życzkowski	<i>Coherifying quantum channels</i>	NEW JOURNAL OF PHYSICS, 2018, v. 20, p. 43028, https://doi.org/10.1088/1367-2630/aaaff3
36	Jakub Czartowski, Dardo Goyeneche, Karol Życzkowski	<i>Entanglement properties of multipartite informationally complete quantum measurements</i>	Journal of Physics A-Mathematical and Theoretical, 2018, v. 51, https://doi.org/10.1088/1751-8121/aac973
37	Michał Białończyk, Andrzej Edmund Jamiołkowski, Karol Życzkowski	<i>Application of Shemesh theorem to analysis of spectral properties of quantum channels</i>	Journal of Mathematical Physics, 2018, v. 59, p. 102204, https://doi.org/10.1063/1.5027616
38	Zbigniew Puchała, Łukasz Marek Rudnicki , Aleksandra Krawiec, Karol Życzkowski	<i>Majorization uncertainty relations for mixed quantum states</i>	Journal of Physics A-Mathematical and Theoretical, 2018, v. 51, p. 175306, https://doi.org/10.1088/1751-8121/aab66c
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40	Daniel Tasca, Łukasz Marek Rudnicki , Roy Aspden, Miles Padgett, Paulo Souto-Ribeiro, Stephen Walborn	<i>Testing for entanglement with periodic coarse graining</i>	PHYSICAL REVIEW A, 2018, v. 97, p. 42312, https://doi.org/10.1103/PhysRevA.97.042312
41	Eduardo Paul, Stephen Walborn, Daniel Tasca, Łukasz Marek Rudnicki	<i>Mutually unbiased coarse-grained measurements of two or more phase-space variables</i>	PHYSICAL REVIEW A, 2018, v. 97, p. 52103, https://doi.org/10.1103/PhysRevA.97.052103
42	Fabrizio Toscano, Daniel Tasca, Łukasz Marek Rudnicki , Stephen Walborn	<i>Uncertainty relations for Coarse-Grained Measurements: an Overview</i>	Entropy, 2018, v. 20, p. 454, https://doi.org/10.3390/e20060454
43	Łukasz Marek Rudnicki	<i>Uncertainty-reality complementarity and entropic uncertainty relations</i>	Journal of Physics A-Mathematical and Theoretical, 2018, v. 51, p. 504001,

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44	Łukasz Marek Rudnicki , Clemens Gneiting	<i>Stabilizable Gaussian states</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 32120, https://doi.org/10.1103/PhysRevA.98.032120
45	Marc Olivier Renou, Jędrzej Kaniewski , Nicolas Brunner	<i>Self-Testing Entangled Measurements in Quantum Networks</i>	Physical Review Letters, 2018, v. 121, p. 250507, https://doi.org/10.1103/PhysRevLett.121.250507
46	Agnieszka Janiuk (CTP PAS), Petra Sukova (ASU CAS), Ishika Palit (CTP PAS)	<i>Accretion in a dynamical spacetime and spinning up of the black hole in the gamma ray burst central engine</i>	The Astrophysical Journal, 2018, v. 868, p. 1, 68, https://doi.org/10.3847/1538-4357/aae83f
47	Mikołaj Czechlewski, Debashis Saha , Armin Tavakoli, Marcin Pawłowski	<i>Device-independent witness of arbitrary-dimensional quantum systems employing binary-outcome measurements</i>	PHYSICAL REVIEW A, 2018, v. 98, p. 62305, https://doi.org/10.1103/PhysRevA.98.062305
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49	Lovell, Mark R.; Barnes, David; Bahé, Yannick; Schaye, Joop; Schaller, Matthieu; Theuns, Tom; Bose, Sownak; Crain, Robert A.; dalla Vecchia, Claudio; Frenk, Carlos S.; Hellwing, Wojciech ; Kay, Scott T.; Ludlow, Aaron D.; Bower, Richard G	<i>The signal of decaying dark matter with hydrodynamical simulations</i>	Monthly Notices of Royal Astronomical Society (przyjęta do druku), 2019, http://adsabs.harvard.edu/abs/2018arXiv181005168L

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No.	Authors	Title	Journal
1	Jerzy Juliusz Kijowski	<i>General Relativity Theory and Its Canonical Structure</i>	Geometric Methods in Physics XXXV, 2018, p. 255-260
2	Łukasz Turski	<i>Początek historii a Edukacja</i>	Wolność Wieczne Wyzwanie, 2018
3	Łukasz Turski	<i>Edukacja w czasach powszechności kłastw i oszustw</i>	Open Eyes Book 3, 2018 https://oees.pl/wp-content/uploads/2018/11/OEES_2018_OE-book_PL_www.pdf
4	Agnieszka Janiuk, Konstantinos Sapountzis	<i>Gamma Ray Bursts: Progenitors, Accretion in the Central Engine, Jet Acceleration Mechanisms</i>	Cosmic Rays, 2018, p. pp. 13-37, https://doi.org/DOI:10.5772/intechopen.72533

Conference publications indexed in WoS

No.	Authors	Title	Journal
1	Florian Curchod, Markus Johansson, Remigiusz Augusiak , Matty Hoban, Peter Wittek, Antonio Acin	<i>A Single Entangled System Is an Unbounded Source of Nonlocal Correlations and of Certified Random Numbers</i>	Leibniz International Proceedings in Informatics, 2018, v. 73, p. 44927, https://doi.org/10.4230/LIPIcs.TQC.2017.0
2	Mikołaj Grzędzielski, Agnieszka Janiuk, Bożena Jadwiga Czerny , Quingwen Wu	<i>Modified viscosity in accretion disks</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 291-297, https://www.pta.edu.pl/pliki/proc/vol7/v7p291.pdf
3	Bożena Jadwiga Czerny , Swayamtrupta PASda, Bei You	<i>Narrow-line Seyfert 1 galaxies in the context of the Quasar Main Sequence</i>	PROCEEDINGS OF SCIENCE, 2018, v. 328, p. 30, https://pos.sissa.it/328/030/pdf
4	Swayamtrupta PASda, Bożena Jadwiga Czerny	<i>Using vo tools to iNvestIgate Quasar Spectra (UNIQS)</i>	PROCEEDINGS OF SCIENCE, 2018, v. 328, p. 50, https://pos.sissa.it/328/050/pdf
5	Swayamtrupta PASda, Bożena Jadwiga Czerny, Conor Patrick Wildy, Marzena Śniegowska	<i>Testing the physical driver of Eigenvector 1 in Quasar Main Sequence</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 298-303, https://www.pta.edu.pl/pliki/proc/vol7/v7p298.pdf

6	Marzena Śniegowska, Bożena Jadwiga Czerny, Swayamtrupta PASda	<i>Active galactic nuclei with strong Fe line emission</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 258-260, https://www.pta.edu.pl/pliki/proc/vol7/v7p258.pdf
7	Bożena Jadwiga Czerny, Vladimir Karas, Yang-Ron Li, Devaki Kunnerieth, Justyna Średzińska, Swayamtrupta PASda, Marzena Śniegowska, Conor Patrick Wildy	<i>FRADO model of the Broad Line Region in Active Galactic Nuclei</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 264-266, https://www.pta.edu.pl/pliki/proc/vol7/v7p264.pdf
8	Tek Prasad Adhikari, Agata Antonina Różańska, Krzysztof Hryniewicz, Bożena Jadwiga Czerny	<i>Absorption Measure Distribution in AGN</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 322-325, https://arxiv.org/abs/1712.09704
9	Jakub Jarosiński, Mikołaj Sowiński, Grzegorz Henryk Kasprowicz, Lech Mankiewicz , Rafał D., Michał Gąska, Kacper Kondrakiewicz, Ewelina Anna Knapska	<i>Development of automated cage for optogenetic experiments with electromagnetic positioning system</i>	PROCEEDINGS OF SPIE, 2018, v. 10808, p. 108083O, https://doi.org/10.1117/12.2501633
10	Bożena Jadwiga Czerny, Justyna Średzińska, Jan Paweł Kotlarz, Andrzej Jarosław Udalski, Swayamtrupta PASda, Conor Patrick Wildy	<i>The first measurement of the Mg II line delay in a quasar at redshift ~ 1</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 267-269
11	Elżbieta Kuligowska, Agnieszka Kuźmicz	<i>Most distant large sized FR II radio sources from SDSS, FIRST and NVSS catalogues</i>	Proceedings of the Polish Astronomical Society, 2018, v. 7, p. 82-87, https://www.pta.edu.pl/pliki/proc/vol7/v7p82.pdf
12	Łukasz Marek Rudnicki, Zbigniew Puchała, Karol Życzkowski	<i>Gauge invariant information concerning quantum channels</i>	Quantum, 2018, v. 2, p. 60, https://doi.org/10.22331/q-2018-04-11-60
13	Grzegorz Kazimierz Rajchel, Adam Gąsiorowski, Karol Życzkowski	<i>Robust Hadamard matrices, unistochastic rays in Birkhoff polytope and equi-entangled bases in composite spaces</i>	Mathematics in Computer Science, 2018, v. 12, p. 473–490, https://doi.org/10.1007/s11786-018-0384-y
14	Marzena Śniegowska, Bożena Jadwiga Czerny, Swayamtrupta PASda, Krzysztof Hryniewicz	<i>FAQS: Fitting Automatic Quasar Spectra</i>	PROCEEDINGS OF SCIENCE, 2018, v. 328, p. 52, http://adsabs.harvard.edu/abs/2018rnls.confE..52S
15	Łukasz Turski	<i>Teaching Physics in XXI Cent,</i>	Journal of Physics.

		<i>Why and How</i>	Conference Series, 2018, v. 1076, p. 7, https://doi.org/10.1088/1742-6596/1076/1/012001
16	Didier Barret, Agnieszka Janiuk , i in.	<i>The Athena X-ray Integral Field Unit (X-IFU)</i>	Proceedings of the SPIE, 2018, v. 10699, p. id. 106991G, 15 pp., https://doi.org/10.1117/12.2312409
17	Katarzyna Wojczuk, Agnieszka Janiuk	<i>Nucleosynthesis in Black Hole accretion flows feeding short GRBs</i>	Proceedings of the Polish Astronomical Society, 2018, v. 5, p. pp. 337-340, https://www.pta.edu.pl/p/like/proc/vol7/v7p337.pdf
18	Jerzy Kijowski	<i>Einstein theory of gravitation is universal</i>	Proceedings of the First Hermann Minkowski Meeting on the Foundations of Spacetime Physics, 2018
19	Agnieszka Janiuk , Konstantinos Sapountzis , Jeremy Mortier , Ireneusz Janiuk	<i>Numerical Simulations of Black Hole Accretion Flows</i>	Supercomputing Frontiers and Innovations, 2018, v. 5, p. pp. 86-102, https://doi.org/10.14529/jsfi180208

Other publications and conference materials

No.	Authors	Title	Journal
1	Agnieszka Kuźmicz	<i>Populacje gwiazdowe gigantycznych radioźródeł</i>	Częstochowski Kalendarz Astronomiczny 2018, 2018, p. 291-299, http://astronomianova.org/pdf/cka18.pdf
2	Agnieszka Kuźmicz	<i>Kalendarz na rok 2018</i>	Częstochowski Kalendarz Astronomiczny 2018, 2018, p. 9-21., http://astronomianova.org/pdf/cka18.pdf
3	Bogdan Wszolek, Agnieszka Kuźmicz	<i>W roku 2018</i>	Częstochowski Kalendarz Astronomiczny 2018, 2018, p. 21-24, http://astronomianova.org/pdf/cka18.pdf
4	J. Zakrzewski, K. Życzkowski ,	<i>Przeciw „dziedziczeniu prestiżu”</i>	PAUza Akademicka, 2018, v. 440, p. 2, http://pauza.krakow.pl/440_20

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5	A. Janiuk	<i>GLADIS: GLocal Accretion Disk Instability Simulation</i>	Astrophysics Source Code Library, 2018, p. record ascl:1812.002, http://ascl.net/1812.002
6	Cisewski-Kehe, Jessi; Wu, Mike; Fasy, Brittany; Hellwing, Wojciech ; Lovell, Mark; Rinaldo, Alessandro; Wasserman, Larry	<i>Investigating the Cosmic Web with Topological Data Analysis</i>	American Astronomical Society, AAS Meeting #231, id. 213.07, 2018, http://adsabs.harvard.edu/abs/2018AAS...23121307C
7	Carlo Maria Scandolo, Roberto Salazar, Jarosław K. Korbicz , Paweł Horodecki	<i>Is it possible to be objective in every physical theory?</i>	arXiv, 2018, p. arXiv:1805.12126, https://arxiv.org/abs/1805.12126
8	Jan Tuziemski, Aniello Lampo, Maciej Lewenstein, Jarosław K. Korbicz	<i>Decoherence of spin registers revisited</i>	arXiv, 2018, p. arXiv:1811.01808, https://arxiv.org/abs/1811.01808
9	Iwo Białynicki-Birula , Łukasz Andrzej Turski	<i>Psychologia Kwantowa</i>	PAUza Akademicka, 2018, v. XI, p. 43162, http://pauza.krakow.pl/435_3_2018.pdf

Popular science publications

No.	Authors	Title	Journal
1	Agnieszka Kuźmicz	<i>Nocne niebo</i>	Rzepiennik wczoraj i dziś, 2018, v. 7(112), p. 18
2	Agnieszka Kuźmicz	<i>Kosmiczny teleskop Hubble'a</i>	Rzepiennik wczoraj i dziś, 2018, v. 2(113), p. 15
3	Agnieszka Kuźmicz	<i>Całkowite zaćmienie Księżyca - 27.07.2018</i>	Rzepiennik wczoraj i dziś, 2018, v. 3(114), p. 15
4	Agnieszka Kuźmicz	<i>Międzynarodowa stacja kosmiczna</i>	Rzepiennik wczoraj i dziś, 2018, v. 5(116), p. 17
5	Łukasz Turski	<i>Jak uczymy Dzieci</i>	Odra, 2018, v. 10
6	Łukasz Turski , Anita Czupryn	<i>Cambridge Analytica to zwykli złodzieje</i>	Polska the Times, 2018, v. 43191
7	Łukasz Turski , Anita Czupryn	<i>Co przyniesie przyszłość</i>	Polska the Times, 2018, v. 43465
8	Wojciech Hellwing	<i>Co spada na głowę</i>	Academia, 2017 (online 2018), v. 4/52/2017
9	Wojciech Hellwing	<i>Nieliniowy Wszechświat Romana</i>	Urania: Postępy Astronomii, 2018, v. 43132

Conference presentations and seminars of CTP PAS employees in 2018

Dissemination of scientific results

No.	Author	Lecture title	Conference
1	Bożena Czerny	<i>Narrow Line Seyfert 1 galaxies in the context of Quasar Main Sequence</i>	Narrow Line Seyfert 1 galaxies in the context of Quasar Main Sequence, Padwa, 10-13 kwietnia 2018, rodzaj: zaproszony
2	Bożena Czerny	<i>The origin of the Broad Line Region in Active Galactic Nuclei</i>	COSPAR 2018, Pasadena, 14-22.07.2018, rodzaj: zaproszony
3	Bożena Czerny	<i>Quasars from LSST as dark energy tracers</i>	COSPAR 2018, Pasadena, 14-22.07.2018, rodzaj: plakat
4	Bożena Czerny	<i>The comparison of the dust-based FRADO model to the current delay measurements for AGN sample</i>	Quasars and Cosmology, Padwa, 22-24.08.2018, rodzaj: zaproszony
5	Bożena Czerny	<i>Accretion in active galactic nuclei</i>	Accretion Processes in Cosmic Sources II, Saint Petersburg, Sankt Petersburg, 3-8.09.2018, rodzaj: zaproszony
6	Bożena Czerny	<i>Observational determination of the Eddington ratio in AGN</i>	Slim disk workshop, CAMK, Warsaw, 21-23.10.2018, rodzaj: zaproszony
7	Bożena Czerny	<i>The disk/corona/BLR connection in AGN</i>	FERO9, Heraklion, 22-25.05.2018, rodzaj: zaproszony
8	Kazimierz Rzążewski	<i>From Kuba to roton</i>	Chaotic path to cold atom physics, Kraków, 10-11.02/2018, rodzaj: zaproszony
9	Kazimierz Rzążewski	<i>Cold dipolar bosons: from many to a few</i>	Quantum resources, Sopot, 24-26.05.2018, rodzaj: zaproszony
10	Kazimierz Rzążewski	<i>Dipolar bosons: from solitons to rotons</i>	Controlling quantum matter: from cold atoms to solids, Wilno, 29.07-2.08.2018, rodzaj: zaproszony
11	Kazimierz Rzążewski	<i>Fermionic quantum carpets</i>	Quantum Technologies, Jastarnia, 11-15.09.2018, rodzaj: zaproszony
12	Krzysztof Pawłowski	<i>Roton in a few-body dipolar system</i>	Dynamics Days 2018 - Europe, Loughborough, Wielka Brytania, 3-7.09.2018
13	Łukasz Rudnicki	<i>Mutual Unbiasedness in Coarse-grained Continuous Variables</i>	KCIK Symposium 2018 'Quantum Resources', Sopot, 24-26.05.2018, rodzaj: zaproszony
14	Łukasz Rudnicki	<i>Mutual Unbiasedness in Coarse-grained Continuous Variables</i>	2nd Joensuu Conference of Coherence and Random Polarization, Joensuu (Finlandia), 11-17.06.2018, rodzaj: zaproszony
15	Łukasz Rudnicki	<i>Mutual Unbiasedness in Coarse-grained Continuous Variables</i>	Modern topics in Quantum Information Conference, Natal (Brazylia), 04-12.08.2018, rodzaj: zaproszony
16	Łukasz	<i>Mutual Unbiasedness in</i>	Quantum Optics IX, Cartagena (Kolumbia),

	Rudnicki	<i>Coarse-grained Continuous Variables</i>	21-28.10.2018, rodzaj: zaproszony
17	Łukasz Rudnicki	<i>Quantum correlations and complementarity of vector light</i>	OSA Latin America Optics & Photonics Conference, Lima (Peru), 12-15.11.2018, rodzaj: sekcyjny
18	Eleonora Villa	<i>Lensing convergence in galaxy clustering in LCDM and beyond</i>	UniVersum, Bologna, Italy, 11-13/04/2018, rodzaj: Invited
19	Eleonora Villa	<i>The distance-redshift relation in the inhomogeneous Universe: improving perturbation theory</i>	CosmoBack - From inhomogeneous gravity to cosmological back-reaction:Theoretical opportunity? Observational evidence?, Marseille, France, 28-31/05/2018, rodzaj: Invited
20	Remigiusz Augusiak	<i>Bell inequalities for maximally entangled states and self-testing</i>	CosmoBack – From inhomogeneous gravity to cosmological back-reaction:, undefined, 24-26.05.2018, rodzaj: zaproszony
21	Remigiusz Augusiak	<i>Bell inequalities for maximally entangled states</i>	Theoretical opportunity? Observational evidence?, undefined, 13-16.06.2018, rodzaj: sekcyjny
22	Remigiusz Augusiak	<i>Self-testing of two-qutrit quantum systems</i>	Quantum Technology International Conference (QTech), Paryż, 5-7.09.2018, rodzaj: sekcyjny
23	Remigiusz Augusiak	<i>Self-testing of two-qutrit quantum systems</i>	Entanglement Days 2018, Budapeszt, 26-28.09.2018, rodzaj: sekcyjny
24	Eleonora Villa	<i>The distance-redshift relation in the inhomogeneous Universe: improving perturbation theory</i>	General Relativistic effects in cosmological large-scale structure, Sexten, Italy, 16-20/07/2018, rodzaj: Invited
25	Eleonora Villa	<i>Theoretical systematics in galaxy clustering in LCDM and beyond</i>	From Dark Energy to bright synergies, Sexten, Italy, 23-27/07/2018, rodzaj: Invited
26	Eleonora Villa	<i>The distance-redshift relation in the inhomogeneous Universe: improving perturbation theory</i>	Inhomogeneous cosmologies III, Krakow, Poland, 17-21/09/2018, rodzaj: Invited
27	Swayamtrupta PASda	<i>Quasar Main Sequence: Modelling in the Optical plane</i>	34th IAP Conference: Massive black holes in evolving galaxies: from quasars to quiescence, Paris, France, 25-29/06/2018, rodzaj: Sectional
28	Swayamtrupta PASda	<i>Decoding the FeII emission in the context of Quasar Main Sequence</i>	Super Eddington Accretion onto Compact Objects II, Cagliari, Sardinia, Italy, 1-5/10/2018, rodzaj: Sectional
29	Swayamtrupta PASda	<i>Decoding the FeII emission in the context of Quasar Main Sequence</i>	Slim Disk Workshop, CAMK, Warsaw, Poland, 21-23/10/2018, rodzaj: Sectional
30	Swayamtrupta PASda	<i>Decoding the FeII emission in the context of Quasar Main Sequence</i>	International Observational School "The current and future observing facilities: a guided tour", Belgrade, Serbia, 02-07/09/2018, rodzaj: Sectional
31	Swayamtrupta	<i>Quasar Main Sequence:</i>	4th Indo-French Spectroscopy School 2D-

	PASda	<i>FeII enhancement in the context of Eigenvector 1</i>	3D, Lyon, France, 09-16/09/2018, rodzaj: Sectional
32	Swayamtrupta PASda	<i>Strong FeII emission in Narrow-line Seyfert 1 Galaxies</i>	IAU Symposium 341: Challenges in PASchromatic Modelling of galaxies with next-generation facilities, Osaka, JaPAS, 12-16/11/2018, rodzaj: Sectional
33	Marek Kuś	<i>No-signaling, logic and probability</i>	50th Symposium on Mathematical Physics, Toruń, Polska, 21-24.06.2018, rodzaj: zaproszony
34	Marek Kuś	<i>Symplectic and algebraic geometry of entanglement</i>	Non-commutative Structures in Physics, Gdańsk, Polska, 5-7.07.2019, rodzaj: zaproszony
35	Marek Kuś	<i>Geometry of entanglement</i>	Chaotic paths to cold atom physics, Kraków, Polska, 10-11.02.2018, rodzaj: zaproszony
36	Marek Kuś	<i>Natural Sciences: Global or National?</i>	Topographien der Globalisierung/Topographies of Globalization, Warszawa, Polska, 19-21.01.2018, rodzaj: zaproszony
37	Marek Kuś	<i>Symplectic geometry of entanglement</i>	Classical and Quantum Physics: Geometry, Dynamics and Control, Madrid, Spain, 5 - 9.03.2018, rodzaj: zaproszony
38	Marek Kuś	<i>Logic, probability and some ontological problems of physics</i>	Philosophy and Mathematics, Wrocław, Polska, 5-6.10.2018, rodzaj: zaproszony
39	Marek Kuś	<i>Quantum vs. Classical Machine Learning</i>	7th Peripatetic Conference on Cognitive Systems Modeling, Małe Ciche, Polska, 18-21.10.2018, rodzaj: zaproszony
40	Marek Kuś	<i>Quantum entanglement and emergence of the classical Leibnitz's principle of the identity of indiscernibles</i>	XXII Kraków Methodological Conference, Kraków, Polska, 11-12.10.2018, rodzaj: zaproszony
41	Marek Kuś	<i>How being Humboldtian influenced my life</i>	Humboldt Kolleg: Controlling quantum matter: From ultracold atoms to solids, Wilno, Litwa, 29.07-2.08.2018, rodzaj: zaproszony
42	Piotr Grochowski	<i>Ferromagnetic instability in a dynamical system of a repulsive two-component Fermi gas</i>	669. WE-Heraeus-Seminar on Quantum Gases and Quantum Coherence, Bad Honnef, Niemcy, 15-18.04.2018, rodzaj: poster
43	Piotr Grochowski	<i>Ferromagnetic instability in a dynamical system of a repulsive two-component Fermi gas</i>	Les Houches predoc school on Ultracold Fermions, Les Houches, Francja, 1-12.10.2018, rodzaj: poster
44	Mikołaj Korzyński	<i>Optical drift effects in cosmology – covariant approach</i>	Hot topics in Modern Cosmology; Spontaneous Workshop XII, Institut d'Études Scientifiques de Cargèse, Francja, 14-19.05.2018, rodzaj: plenary
45	Mikołaj Korzyński	<i>Covariant and observer-independent approach to</i>	IX International Meeting on Lorentzian Geometry, Instytut Banacha, Warszawa, 17-

		<i>geometric optics in GR</i>	24.06.2018, rodzaj: plenary
46	Mikołaj Korzyński	<i>Optical drift effects in cosmology – covariant approach</i>	GR effects in cosmological large scale structure, Sexten Center for Astrophysics, Sesto, Włochy, 16.07-20.07.2018, rodzaj: invited
47	Mikołaj Korzyński	<i>Covariant and observer-independent approach to geometric optics in GR</i>	Inhomogeneous Cosmologies III, FAIS UJ, Kraków, 2018, rodzaj: plenary (organizer)
48	Ishika Palit	<i>Shock front in Accretion disk</i>	"Supercomputing Frontiers Europe 2018", Interdisciplinary Center for Mathematical and Computational Modeling, Warsaw, Poland., 12.03.2018 - 16.03.2018, rodzaj: Poster
49	Ishika Palit	<i>Effects of adiabatic index on transonic solution of low angular momentum accretion flow</i>	14th summer school on modern astrophysics (14A SOMA), Moscow, Russia, 02.07.2018 - 13.07.2018, rodzaj: Sectional
50	Debashis Saha	<i>The fundamental connection between quantum contextuality and quantum communication</i>	Asian Quantum Information Science Conference 2018, Nagoya, JaPAS, 08.09.2018 - 12.09.2018, rodzaj: Contributed talk
51	Karol Życzkowski	<i>Iso-entangled mutually unbiased bases and mixed states designs</i>	Towards Ultimate Quantum, Linnaeus University, Vaxjo, 2018-06-11, rodzaj: Invited talk
52	Karol Życzkowski	<i>On Restricted Numerical Range</i>	14-th Workshop on Numerical Range, Munich, Germany, 2018-06-16, rodzaj: Invited talk
53	Karol Życzkowski	<i>Coherifying Quantum States and Quantum Channels</i>	50-Symposium Mathematical Physics, UMK, Torun, Polska, 2018-06-22, rodzaj: Invited talk
54	Karol Życzkowski	<i>Quantum chaos and irreversible dynamics</i>	Dynamics Days, University of Loughborough, 2018-09-04, rodzaj: Invited talk
55	Karol Życzkowski	<i>Multipartite entanglement and combinatorial designs</i>	Workshop Entanglement Days, Budapest, Hungary, 2018-10-26, rodzaj: Invited talk
56	Karol Życzkowski	<i>Distinguishing classically indistinguishable states and channels</i>	Workshop Quantum, Cagliari, 8-10.10.2018, rodzaj: Invited talk
57	Karol Życzkowski	<i>Distinguishing classically indistinguishable states and channels</i>	QIPA 2018, Harish-Chandra Institute, Allahabad, India, 2018-12-04, rodzaj: Invited talk
58	Rafał Ołdziejewski	<i>From few to many: dipolar atoms in a harmonic trap</i>	FINESSE 2018, Wanaka, New Zealand, 19-23.02.2018, rodzaj: poster
59	Rafał Ołdziejewski	<i>Roton in a few-body dipolar system</i>	ICAP 2018, Barcelona, Spain, 22-27.07.2018, rodzaj: poster
60	Rafał Ołdziejewski	<i>Roton in a few-body dipolar system</i>	Small and Medium Sized Cold Atom Systems, Benasque, Spain, 29.07-04.08.2018, rodzaj: plenary talk
61	Adam Sawicki	<i>Quantum entanglement</i>	Entanglement Days, Budapest, Hungary, 26-

		<i>from single particle information</i>	28.09.2018, rodzaj: invited talk
62	Adam Sawicki	<i>Quantum entanglement from single particle information</i>	32nd International Colloquium on Group Theoretical Methods in Physics, Praga, Czechy, 09-13.07.2018, rodzaj: invited talk
63	Adam Sawicki	<i>Quantum entanglement from single particle information</i>	50 Symposium on Mathematical Physics, Toruń, Polska, 21-24.06.2018, rodzaj: invited talk
64	Adam Sawicki	<i>Mathematics of quantum computation and universality</i>	Multipartitet Entanglement , Benasque, Spain, 20-26.05.2018, rodzaj: Contributed talk
65	Tomasz Maciążek	<i>Multipartite entanglement from single particle information</i>	Multipartite Entanglement , Benasque, Spain, 20-26.05.2018, rodzaj: Poster
66	Tomasz Maciążek	<i>How does topology of configuration spaces lead to different kinds of quantum statistics? A study of quantum statistics on graphs.</i>	50 Symposium on Mathematical Physics, Toruń, Polska, 21-24.06.2018, rodzaj: Poster
67	Jerzy Kijowski	<i>Trautman-Bondi energy and its universality</i>	Int. Conference Singularities of General Relativity and their quantum Fate, Warszawa. Polska, 21 - 26 May 2018, rodzaj: zaproszony
68	Jerzy Kijowski	<i>Energy carried by gravitational radiation</i>	Int. Conference: Geometry, Integrability and Quantization, Varna, Bułgaria, June 2-7, 2018, rodzaj: zaproszony
69	Jerzy Kijowski	<i>Trautman-Bondi Mass: How much energy is carried by gravitational waves</i>	IX International Meeting on Lorenzian Geometry, Warszawa. Polska, 17.VI -- 24 VI 2018, rodzaj: zaproszony
70	Jerzy Kijowski	<i>The essence of gravitation theory</i>	50th Symposium on Mathematical Physics, Toruń, Polska, June 21–24, 2018, rodzaj: zaproszony
71	Jerzy Kijowski	<i>Twierdzenia Noether, twierdzenie Belinfante-Rosenfelda, oraz liczne, narosłe wokół nich nieporozumienia</i>	Smpozjum w setną rocznicę twierdzenia Noether zorganizowane przez IPPT PAS, Warszawa, Polska, 19-20 lipca 2018, rodzaj: zaproszony
72	Jerzy Kijowski	<i>New approach to Trautman-Bondi energy: how much energy is carried by gravitational wave</i>	The 5th Conference of the Polish Society on Relativity, Wojanów, Polska, 24-27 September 2018, rodzaj: zaproszony
73	Lech Mankiewicz	<i>Humanista w cyfrowym świecie</i>	Rozpoczęcie roku akademickiego w Instytucie Badań Literackich, IBL PAS, Warszawa, Polska, 9 października 2018, rodzaj: zaproszony
74	Lech Mankiewicz	<i>Dokąd zmierzamy - prezentacja głównych kierunków rozwoju edukacji - dyskusja</i>	Inauguracja Wyższej Szkoły Humanitas w Sosnowcu, Wyższa Szkoła Humanitas w Sosnowcu, 13 września 2018, rodzaj: zaproszony

		<i>PASelowa</i>	
75	Lech Mankiewicz	<i>Nieprzypadkowe piękno matematyki</i>	Dzień Popularyzacji Matematyki, PW, Politechnika Warszawska, 13 września 2018
76	Lech Mankiewicz	<i>Problemy dydaktyki fizyki w szkole wyższej - dyskusja PASelowa</i>	I Kongres Nauczycieli Fizyki, Uniwersytet Łódzki, 14 września 2018, rodzaj: zaproszony
77	Lech Mankiewicz	<i>Co ciekawego można powiedzieć o układzie równań opisujących zderzenie elastyczne dwóch cząstek w jednym wymiarze</i>	I Kongres Nauczycieli Fizyki, Uniwersytet Łódzki, 15 września 2018
78	Lech Mankiewicz	<i>Aspekty finansowo-organizacyjne realizacji przedsięwzięć AI w Polsce - dyskusja PASelowa</i>	Konferencja - Polskie Porozumienie na rzecz Rozwoju Sztucznej Inteligencji, Poznań, Politechnika Poznańska, 18 października 2018, rodzaj: zaproszony
79	Lech Mankiewicz	<i>Szkola w czasach cyfrowej rewolucji</i>	I Pomorski Hackaton Edukacyjny, Pomorskie Kuratorium Oświaty, 15 listopada 2018, rodzaj: zaproszony
80	Lech Mankiewicz	<i>Szkola w czasach rewolucji - ciąg dalszy</i>	III Forum Edukacji Realnej, "Dajmy Światu Szkołę", Lublin, UMCS w Lublinie, 16 listopada 2018, rodzaj: zaproszony
81	Lech Mankiewicz	<i>Szkola w czasach zmian</i>	Festiwal "Koderek", Zespół Szkół nr 10 i nr 27, Ostrobramska 72, Warszawa, 24 listopada 2018, rodzaj: zaproszony
82	Lech Mankiewicz	<i>Technologie informacyjne w nauczaniu fizyki</i>	Ogólnopolskie Seminarium Nauczycieli Fizyki, Wydział Fizyki UW, Warszawa, Wydział Fizyki UW, 12 grudnia 2018
83	Agnieszka Janiuk	<i>Numerical Simulations of black hole accretion flows</i>	Supercomputing Frontiers in Europe, Interdyscyplinarne Centrum Modelowania ICM UW, 12-15.03.2018, rodzaj: referat zaproszony
84	Jeremy Mortier, Kostas Sapountzis, Agnieszka Janiuk	<i>When Okeanos got HARM</i>	Supercomputing Frontiers in Europe, Interdyscyplinarne Centrum Modelowania ICM UW, 12-15.03.2018, rodzaj: plakat
85	Katarzyna Wojczuk, Agnieszka Janiuk	<i>Nukleosynteza w plazmie akreującej na czarną dziurę u podstawy dżetu w rozbłyskach gamma</i>	POLNS (Polish Neutron Stars), Centrum Astronomiczne PAS, Warszawa, 23-26.03.2018, rodzaj: plakat
86	Agnieszka Janiuk	<i>Astrophysical sources of gravitational radiation</i>	Singularities of General Relativity and their Quantum Fate, Centrum Banacha, IM PAS, Warszawa, 21-25.05.2018, rodzaj: referat zaproszony
87	Agnieszka Janiuk	<i>Black Hole hyperaccretion in GRB engines</i>	Gamma Ray Bursts and Supernovae - from the central engine to the observer, Uniwersytet Paris-Sud, Orsay, Francja, 01-15.07.2018, rodzaj: referat zaproszony
88	Agnieszka	<i>Variability of</i>	XXX General Assembly of the International

	Janiuk	<i>magnetically dominated jets in blazars and gamma-ray bursts</i>	Astronomical Union, Wiedeń. Austria, 27-31.08.2018, rodzaj: plakat elektroniczny
89	Agnieszka Janiuk	<i>Astrophysical Sources of gravitational radiation</i>	The multi-messenger astronomy: gamma-ray bursts, search for electromagnetic counterparts to neutrino events and gravitational waves, Special Astrophysical Observatory, Niznyj Arkhyz, Rosja, 7-14.10.2018, rodzaj: referat zaproszony
90	Mikołaj Grzędzielski, Agnieszka Janiuk, Bożena Czerny	<i>Atomic opacities and thermal instability in accretion disks</i>	42nd COSPAR Scientific Assembly, Pasadena, USA, 14-22.07.2018, rodzaj: plakat
91	Mateusz Wiśniewicz, Andrzej Zdziarski, Agnieszka Janiuk, Dorota Rosińska, Agnieszka Słowikowska	<i>Long-term quasi-periodicity of 4U 1636-536 resulting from accretion disk instability</i>	42nd COSPAR Scientific Assembly, Pasadena, USA, 14-22.07.2018, rodzaj: plakat
92	Jarosław Korbicz	<i>Spectrum Broadcast Structures and Quantum Origins of Objectivity</i>	IICQI 2018, Tehran, Iran, 8-11.09.2018, rodzaj: invited
93	Jarosław Korbicz	<i>Spectrum Broadcast Structures in the transition from uncertainty of quantum world to objective reality</i>	IPSI2018, Warsaw, Poland, 2018-03-09, rodzaj: invited
94	Wojciech Hellwing	<i>Modified gravity goes large</i>	XX Sesja Sprawozdawcza Użytkowników KDM, Warszawa, Polska, marzec, 2018, rodzaj: zaproszony wykład plenarny
95	Wojciech Hellwing	<i>Galaxy colliders</i>	Cosmology School in Cracow 2018, Kraków, Polska, VII-18, rodzaj: warsztaty (sekcyjny)
96	Wojciech Hellwing	<i>Why and how we should test gravity?</i>	Cosmology in Dubrovnik 2018, Dubrownik, Chorwacja, październik, 2018, rodzaj: referat
97	Wojciech Hellwing	<i>Cosmic flows, gravity and Copernican principle?</i>	Alpine Cosmology Workshop, Piemont, Włochy, VII-18, rodzaj: referat
98	Katja Sagerschnig	<i>Marked contact twisted cubic structures</i>	Winter School Geometry and Physics, Srni, Czech Republic, January 13-20, 2018, rodzaj: sectional
99	Piotr Waluk	<i>Gauge invariant description of weak gravitational field on a spherically symmetric background</i>	8th Central European Relativity Seminar, Brno, Czech Republic, 15.-17.02.2018, rodzaj: contributed talk
100	Tomasz Pawłowski	<i>Emergent de Sitter epoch in loop quantum</i>	6th EFI winter conference on quantum gravity, Tux-Lanersbach, Austria, 19-

		<i>cosmology</i>	23.02.2018, rodzaj: contributed talk
101	Tomasz Pawłowski	<i>Loop Quantum Cosmology: from polymer quantization to Early Universe dynamics</i>	Arithmetic Methods in Mathematical Physics and Biology, Będlewo, Polska, 6-11.08.2018, rodzaj: invited
102	Tomasz Pawłowski	<i>Emergent de Sitter epoch in loop quantum cosmology</i>	The 5th conferece of Polish Society of Relativity, Wojanów, Polska, 24-27.09.2018, rodzaj: contributed talk
103	Lech Mankiewicz	<i>Social media and making health and medicine understandable for patients</i>	Polish Science Network 2018, Uniwersytet Medyczny, Łódź, 21-23.06.2018, rodzaj: sekcynny
104	Oskar Słowik	<i>Geometria symplektyczna i algebraiczna a splątanie kwantowe</i>	Ogólnopolska Konferencji Studentów Matematyki Oblicze, Poznań, Polska, 11.05.2018-13.05.2018, rodzaj: sekcynny
105	Oskar Słowik	<i>Topologiczne komputery kwantowe</i>	Fizyczno-Optyczna Konferencja FOKA, Wrocław, Polska, 5.12.2018-16.12.2018, rodzaj: plenarny

Presented papers at scientific seminars

No.	Author	Lecture title	Institution
1	Bożena Czerny	<i>Ciemna energia</i>	Koło Naukowe Astronomów Uniwersytetu Warszawskiego, 2018-01-22
2	Bożena Czerny	<i>Ciemna energia</i>	Spotkanie Młodych, Centrum Astronomiczne im. M. Kopernika PAS, 2018-02-22
3	Bożena Czerny	<i>Quasars as tracers of the dark energy</i>	The School of Physics and Technology of Wuhan University, 2018-05-30
4	Bożena Czerny	<i>Quasars as tracers of the dark energy</i>	School of Physics, Huazhong University of Science and Technology, 2018-05-31
5	Bożena Czerny	<i>Accelerated exPASsion of the Universe</i>	Obserwatorium Królowej Jadwigi, Rzepiennik, 2018-06-23
6	Bożena Czerny	<i>Czarne dziury i ciemna energia</i>	Wydział Pedagogiczny UW, 2018-11-22
7	Bożena Czerny	<i>Quasars as tracers of the dark energy</i>	CAMK, Toruń, 2018-12-20
8	Bożena Czerny	<i>Quasars as tracers of the dark energy</i>	Uniwersytet im. M. Kopernika, Piwnice k. Torunia, 2018-11-03
9	Bożena Czerny	<i>Ciemna energia</i>	CAMK, Warszawa, 2018-05-21
10	Bożena Czerny	<i>Accelerated exPASsion of the Universe</i>	CTP, 2018-04-25
11	Agnieszka Kuźmicz	<i>Giant radio sources – distribution and stellar populations</i>	CTP, 2018-02-21
12	Kazimierz Rzązewski	<i>Cold dipolar bosons</i>	CQT Colloquium - Singapur, 2018-03-01
13	Kazimierz Rzązewski	<i>Cold dipolar bosons: dark solitons, rotons and all that</i>	Stuttgart, 2018-04-29
14	Kazimierz	<i>Quantum cryptography</i>	Google - Warszawa, 2018-06-06

	Rz		
15	Krzysztof Pawłowski	<i>Roton in a few-body dipolar system</i>	Instytut Fizyki PAS, 2018-11-20
16	Krzysztof Pawłowski	<i>Many-body roton in dipolar system</i>	Ecole Normale Supérieure, Paryż, 2018-03-13
17	Krzysztof Pawłowski	<i>Fisher Information in the dynamics of the bimodal BEC</i>	Uniwersytet w Bazylei, 2018-03-08
18	Krzysztof Pawłowski	<i>Towards Schrodinger cat state in the bimodal BEC</i>	Ecole Normale Supérieure, Paryż, 2018-03-15
19	Krzysztof Pawłowski	<i>Roton in a few-body dipolar system</i>	Newcastle University, 2018-09-30
20	Krzysztof Pawłowski	<i>Soliton-like states</i>	Centrum Fizyki Teoretycznej PAS, 2018-03-30
21	Łukasz Rudnicki	<i>Quantum correlations and complementarity of vector light</i>	Instytut Fizyki Światła Maxa Plancka w Erlangen, 2018-11-08
22	Łukasz Rudnicki	<i>Mutual Unbiasedness in Coarse-grained Continuous Variables</i>	Instytut Fizyki Uniwersytetu w Siegen, 2018-07-20
23	Jędrzej Kaniewski	<i>Self-testing of quantum systems</i>	Perimeter Institute, Waterloo, Kanada, 2018-10-16
24	Jędrzej Kaniewski	<i>Self-testing of quantum devices: recent developments</i>	Uniwersytet Warszawski, 2018-11-08
25	Remigiusz Augusiak	<i>Towards self-testing of qudit quantum states and</i>	Instytut Fizyki PAS, 2018-12-11
26	Swayamtrupta PASda	<i>Joining the Dots: From Stars to Active Galaxies</i>	CAMK, Warsaw, 2018-01-09
27	Swayamtrupta PASda	<i>Testing the physical driver of Eigenvector 1 in Quasar Main Sequence</i>	UTINAM, Besancon, France, 2018-07-20
28	Swayamtrupta PASda	<i>Deciphering the Quasar Main Sequence in the context of Eigenvector 1</i>	ESO Vitacura, Chile, 2018-08-16
29	Swayamtrupta PASda	<i>Deciphering the Quasar Main Sequence in the context of Eigenvector 1</i>	Calan Observatory, Santiago, Chile, 2018-08-17
30	Swayamtrupta PASda	<i>Deciphering the Quasar Main Sequence in the context of Eigenvector 1</i>	National Observatory, Rio de Janeiro, Brazil, 2018-08-24
31	Swayamtrupta PASda	<i>Deciphering the Quasar Main Sequence in the context of Eigenvector 1</i>	NCBJ, Warsaw, 2018-09-18
32	Marek Kuś	<i>Probability in nonsignaling theories</i>	IF UJ, 2018-12-17

33	Piotr Grochowski	<i>Entanglement of the vacuum witnessed by accelerating observers</i>	CTP PAS, 2018-05-23
34	Piotr Grochowski	<i>Fermionic quantum carpets</i>	CTP PAS, 2018-11-07
35	Piotr Grochowski	<i>Fermionic quantum carpets</i>	WF UW, 2018-11-29
36	Piotr Grochowski	<i>Fermionic quantum carpets</i>	CTP PAS, 2018-12-12
37	Mikołaj Korzyński	<i>Optyka geometryczna w OTW sformułowana kowariantnie</i>	FAIS UJ, 2018-06-13
38	Mikołaj Korzyński	<i>Covariant and observer-independent approach to geometric optics in GR</i>	Max Planck Institute for Gravitational Physics (Albert Einstein Institute, Potsdam), Niemcy, 2018-07-05
39	Julius Serbenta	<i>A Brief History of Stephen Hawking</i>	CTP PAS, 2018-05-30
40	Michele Grasso	<i>“To the infinity and beyond: extreme magnification of a single star”</i>	CTP PAS, 2018-05-28
41	Michele Grasso	<i>The Limited Accuracy of Linearized Gravity</i>	CTP PAS, 2018-12-03
42	Julius Serbenta	<i>Geometric optics in general relativity using bilocal operators</i>	CTP PAS, 2018-12-17
43	Ishika Palit	<i>Star formation and galaxy evolution</i>	IF-PAS, 2018-05-04
44	Ishika Palit	<i>Effects of adiabatic index on transonic solution of low angular momentum accretion flow</i>	Physics and Applied Mathematics Unit (PAMU) of Indian Statistical Institute (ISI), Kolkata, India., 2018-08-17
45	Ishika Palit	<i>Black hole accretion and its variability</i>	CTP-PAS, 2018-11-14
46	Mary Loli Martínez Aldama	<i>Highly accreting quasars</i>	CAMK, Warsaw, 2018-10-03
47	Mary Loli Martínez Aldama	<i>Highly accreting quasars</i>	NCBJ, Warsaw, 2018-11-20
48	Karol Życzkowski	<i>A personal introduction to Quantum Information Theory</i>	Instytut Fizyki, Uniwersytet Zielonogórski, 2018-11-27
49	Rafał Ołdziejewski	<i>Roton in a many-body dipolar system</i>	National University of Singapore, Singapore, 2018-02-28
50	Rafał Ołdziejewski	<i>Roton in a many-body dipolar system</i>	CTP PAS, 2018-03-14
51	Rafał Ołdziejewski	<i>Roton in a many-body dipolar system</i>	Seminarium Optyczne, Uniwersytet Warszawski, 2018-03-15
52	Adam Sawicki	<i>Quantum entanglement from single particle information</i>	Seminarium KWANTOWA INFORMACJA, Wydział Fizyki UW, 2018-11-22

53	Adam Sawicki	<i>Introduction to Riemann hypothesis</i>	Seminarium Science and Coffee, CTP PAS, 2018-10-08
54	Tomasz Maciążek	<i>How does the topology of configuration spaces lead to different kinds of quantum statistics?</i>	Seminarium Zakładu Matematyki Dyskretnej na Wydziale Matematyki Uniwersytetu im. Adama Mickiewicza w Poznaniu, 2018-02-27
55	Tomasz Maciążek	<i>Approximate solutions to the one-body quantum marginal problem and their possible applications</i>	Quantum Information Seminar, University of Bristol, School of Mathematics, 2018-12-14
56	Jerzy Kijowski	<i>Theory of radiation: null infinity and Trautman-Bondi energy</i>	CTP, 17 stycznia 2018
57	Jerzy Kijowski	<i>Energia fal grawitacyjnych według Trautmana i Bondiego</i>	IF PAS, 21 marca 2018
58	Jerzy Kijowski	<i>Gdzie jesteśmy: o próbach usunięcia sprzeczności pomiędzy współczesną teorią grawitacji a kwantową mechaniką (i teorią pola)</i>	Wydz. Fizyki UW, 18 kwietnia 2018
59	Jerzy Kijowski	<i>Energy carried by gravitational waves according to Andrzej Trautman</i>	Wydział Matematyki Uniwersytetu w Białymstoku, 25 kwietnia 2018
60	Jerzy Kijowski	<i>Energy carried by gravitational waves according to Andrzej Trautman</i>	IM PAS, 9 maja 2018
61	Jerzy Kijowski	<i>The essence of gravity theory</i>	Wydz. Fizyki Uniwersytetu Wrocławskiego, 15 czerwca 2018
62	Jerzy Kijowski	<i>The essence of gravity theory</i>	Wydział Fizyki Uniwersytetu Łódzkiego, 14 listopada 2018
63	Jerzy Kijowski	<i>New approach to Trautman-Bondi mass: how much energy is carried by gravitational (or any other) waves</i>	Inst. Fizyki Teoret. Uniwersytetu Lipskiego (Niemcy), 26 listopada 2018
64	Lech Mankiewicz	<i>Cyfrowa rewolucja - co to znaczy dla polskiej wsi</i>	Instytut Rozwoju Wsi i Rolnictwa PAS, 5 lutego 2018
65	Agnieszka Janiuk	<i>Numerical Simulations of black hole accretion in GRB engines</i>	Los Alamos National Laboratory, 2018-08-23
66	Agnieszka Janiuk	<i>Astrofizyka procesów wokół zwartych obiektów kosmicznych</i>	Konwersatorium Wydziału Fizyki Uniwersytetu Jagiellońskiego, 2018-12-19
67	Jarosław Korbicz	<i>Aspekty struktur rozgłoszeniowych w teorii dekoherencji II</i>	Seminarium Zakładu Metod Matematycznych Fizyki, Wydział Fizyki i Astronomii, Uniwersytet Wrocławski, 2018-12-03

68	Jarosław Korbicz	<i>Aspekty struktur rozgłoszeniowych w teorii dekoherencji I</i>	Seminarium Zakładu Metod Matematycznych Fizyki, Wydział Fizyki i Astronomii, Uniwersytet Wrocławski, 2018-10-15
69	Jarosław Korbicz	<i>Spectrum Broadcast Structures And Quantum Origins Of Objectivity</i>	Seminarium Instytutu Fizyki Teoretycznej, Wydział Fizyki i Astronomii, Uniwersytet Wrocławski, 2018-10-12
70	Jarosław Korbicz	<i>Generic appearance of objective results in quantum measurements</i>	Seminarium Katedry Fizyki Teoretycznej, Politechnika Wrocławska, 2018-12-04
71	Katja Sagerschnig	<i>The Geometry of Almost Einstein (2,3,5) Distributions</i>	Geometrical Methods in Physics Seminar, IM PAS, 2018-03-21
72	Katja Sagerschnig	<i>The Geometry of Almost Einstein (2,3,5) Distributions</i>	Exact Results in Quantum Theory & Gravity, Faculty of Physics, Warsaw University, 2018-04-27
73	Wojciech Hellwing	<i>Why and how we should test gravity (on cosmological scales)?</i>	Obserwatorium Astronomiczne, Uniwersytet w Lejdzie, Holandia, VI-18
74	Wojciech Hellwing	<i>How to falsify CDM (and test its alternatives)?</i>	Central European Institute for Cosmology and Fundamental Physics, Praga, Czechy, VII-18
75	Wojciech Hellwing	<i>Why and how we should test gravity on cosmological scales?</i>	OAUJ, Kraków, XI-18
76	Wojciech Hellwing	<i>How to falsify CDM (and test its alternatives)?</i>	Centrum Astronomii, UMK, XII-18
77	Wojciech Hellwing	<i>Why and how we should test gravity (on cosmological scales)?</i>	Komisja Astrofizyki Polskiej Akademii Umiejętności, XI-18
78	Wojciech Hellwing	<i>Modelling of the potential Dark matter decay signal from the Local Group sources</i>	Centrum Astronomiczne im. M. Kopernika PAS, X-18
79	Piotr Waluk	<i>Symplectic spinors</i>	KMMF, Wydział Fizyki, Uniwersytet Warszawski, 2018-01-18
80	Piotr Waluk	<i>Symetrie jednorodnych wszechświatów</i>	KMMF, Wydział Fizyki, Uniwersytet Warszawski, 2018-11-21
81	Tomasz Pawłowski	<i>Loop Quantum Cosmology: from polymer quantization to Early Universe dynamics</i>	Instytut, Fizyki Teoretycznej, Wydział Fizyki i Astronomii, Uniwersytet Wrocławski, 2018-10-26
82	Tomasz Pawłowski	<i>Hamburger's semiclassical formalism in quantum cosmology</i>	CTP, PAS, 2018-10-29

Organisational work on conferences

No.	Conference	Place and date	Other data
1	COSPAR, Event E1.4,	<i>Pasadena, 14-22 June 2018</i>	COSPAR, SOC Symposium E1.4, foreign, 2000 in total, 100 persons in Symposium

			E1.4
2	Radio – vis -IR Rzepliennik Meeting	<i>Rzepliennik Biskupi, 7-9.06.2018</i>	Queen Hedwig's Astronomical Observatory, National Centre for Nuclear Research, Jagiellonian University Astronomical Observatory, Nova Astronomy Association, LOC, national, 18 persons
3	Inhomogeneous Cosmologies III	<i>Cracow, 16-21.09.2018</i>	Faculty FAIS UJ, SOC, national, 37 persons
4	XII Winter school in Cosmology	<i>Passo del Tonale (Italy), 10-14/12/2018</i>	Heidelberg University, SOC, foreign, 37 persons
5	COSPAR, Event E1.4,	<i>Pasadena, 14-22 June 2018</i>	COSPAR, SOC, foreign, 80 persons
6	Workshop on Multipartite Entanglement	<i>Benasque, Spain 20-26 May 2018</i>	Benasque Science Center, co-organiser, foreign, 46 persons
7	Supercomputing Frontiers Europe 2018	<i>Warsaw, Poland, March 2018</i>	ICM UW, SOC, foreign, 100 persons
8	4-th International Summer Cosmology School in Cracow	<i>Cracow, Poland, 8-22 July, 2018</i>	UJ, SOC, co-organiser, foreign, 80 persons
9	Baby-Horizons in Mathematics – Winter School for Students	<i>Będlewo, Poland, 16.03.2018-18.03.2018</i>	IM PAS, co-organiser, national, ~55 persons

Cooperation in the framework of international scientific centres

No.	Centre	Specialization	Other data
1	Antagoga University (Chile)	<i>Quantum computer science</i>	Chairman: Dr Dardo Goyeneche, number of works: 1
2	University of Stockholm	<i>Quantum computer science</i>	Chairman: Prof. I. Bengtsson
3	Indian National Institute, Madras, (India)	<i>Quantum computer science</i>	Chairman: Prof. A. Lakshminarayan
4	University of Tübingen,	<i>Quantum computer science</i>	Chairman: Prof. Daniel Braun
5	University of Stuttgart	<i>Cold gases</i>	Chairman: Dr. Krzysztof Jachymski, single publication: https://link.aps.org/doi/10.1103/PhysRevA.98.043601

Memberships

No.	Person	Membership type
1	Bożena Czerny	<i>Editorial Board of the American Astronomical Journals</i> , appointment year: 2011, function: Scientific Editor, roles: selection of reviewers, supervision of the reviewing and proofreading stage, decision to accept the paper for publication in the <i>Astrophysical Journal</i> , <i>Astrophysical Journal Supplement Series</i> or <i>Astronomical Journal</i> or to reject the paper.
2	Bożena Czerny	<i>Delta</i> popular-scientific journal, year of establishment: 2009, function: member of the Editorial Committee, tasks: meetings twice a year, participation in the discussion on the level of the journal and directions of further development.
3	Bożena Czerny	<i>Polish Astronomical Society</i> , year of establishment: 1979, function: member, tasks: participation in PTA meetings
4	Bożena Czerny	<i>European Astronomical Society</i> , year of formation: Function: Member, tasks: participation in EWASS Annual Conference and General Assembly.
5	Bożena Czerny	<i>Astronomy Committee of the Polish Academy of Sciences</i> , function: member, tasks: participation in meetings
6	Bożena Czerny	<i>Polish Astronomy Foundation</i> , year of its establishment: 2018, function: member of the Foundation Council, tasks: participation in the meeting, evaluation of the Board's work, including the adoption of the Board's report
7	Bożena Czerny	<i>NCN Expert PASel</i> , function: member, chairperson of ST2 PASel, tasks: evaluation of research projects, in case of chairperson assignment of proposals to experts
8	Kazimierz Rzążewski	<i>OPI Scientific Council</i> , year of appointment: 2016, function: member, tasks: participation in meetings, representation of the Minister of Science
9	Kazimierz Rzążewski	<i>KL FAMO Scientific Council</i> , year of establishment: 2000, function: member, tasks: attendance at meetings, representation of the CTP
10	Kazimierz Rzążewski	<i>EPP Editorial Committee</i> , year of appointment: 2013-2018, function: co-editor, tasks: selection of reviewers, decisions about accepting or rejecting works
11	Kazimierz Rzążewski	<i>PE2 PASel of the ERC-starting grants programme</i> , year of establishment: 2010, function: expert, tasks: issuing opinions on scientific projects
12	Kazimierz Rzążewski	<i>WAT expert team</i> , year of appointment: 2016, function: member, tasks: physics teaching consultant at the university
13	Kazimierz Rzążewski	<i>American Physical Society - APS</i> , year of formation: 2000, function: fellow, tasks: elected member
14	Kazimierz Rzążewski	<i>British Physical Society of the ILO</i> , year of formation: 2000, function: fellow, tasks: elected member
15	Łukasz Rudnicki	<i>Advisory PASel of Journal of Physics A</i> , year of appointment: 2018, function: fellow, tasks: support for editors of the journal
16	Remigiusz Augusiak	<i>NCN Expert Team</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
17	Remigiusz Augusiak	<i>FNP Expert Team</i> , year of establishment: 2018, function: member, tasks: evaluation of research projects

18	Marek Kuś	<i>NCN Expert Team</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
19	Marek Kuś	<i>Interdisciplinary team for cooperation with foreign countries of the Ministry of Science and Higher Education</i> , year of establishment: 2015, function: member, tasks: evaluation of research projects
20	Marek Kuś	<i>Evaluation Team of the National Academic Exchange Agency</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
21	Marek Kuś	<i>European Research Council Advanced Grants evaluation PASEl</i> , year of appointment: 2018, function: member, tasks: evaluation of research projects
22	Marek Kuś	<i>Scientific Council of the Institute of Theoretical Physics of the University of Warsaw</i> , year of establishment: 2008, function: member, tasks: attendance at meetings
23	Marek Kuś	<i>Scientific Council of the Institute of Physics of the Polish Academy of Sciences</i> , year of establishment: 2003, function: member, tasks: attendance at meetings
24	Marek Kuś	<i>Scientific Council of the Institute of Social Studies at the University of Warsaw</i> , year of establishment: 1993, function: member, tasks: attendance at meetings
25	Marek Kuś	<i>Scientific Council of the National Centre for Quantum Informatics in Gdańsk</i> , year of establishment: 2007, Function: Chairman, Tasks: Directing meetings
26	Marek Kuś	<i>Scientific Council of the Institute of Mathematics of the Polish Academy of Sciences</i> , year of establishment: 2018, function: member, tasks: attendance at meetings
27	Marek Kuś	<i>Reports on Mathematical Physics</i> , year of appointment: 2006, function: member of the Editorial Committee, tasks: participation in meetings
28	Marek Kuś	<i>Open Systems and Information Dynamics</i> , year of establishment: 2007, function: member of the Editorial Committee, tasks: participation in meetings
29	Marek Kuś	<i>International Journal of Quantum Information</i> , year of appointment: 2010, Function: Editor, Jobs: Selection of reviewers, decision making on acceptance for printing
30	Karol Życzkowski	<i>Council of the Centre for Theoretical Physics of the Polish Academy of Sciences</i> , year of establishment: 1999, function: member, tasks: attendance at meetings
31	Karol Życzkowski	<i>Council of the National Centre for Quantum Computer Science</i> , year of establishment: 2007, function: member, tasks: attendance at meetings
32	Karol Życzkowski	<i>Council of the Faculty of Physics, Astronomy and Applied Informatics of the Jagiellonian University</i> , year of appointment: 1994, function: member, tasks: attendance at meetings
33	Karol Życzkowski	<i>Editorial Board of "Open Systems and Information Dynamics" magazine</i> , year of appointment: 2003, function: member of the Editorial Committee, tasks: participation in meetings
34	Karol Życzkowski	<i>Academia Europea</i> , year of establishment: 2014, function: member, tasks: attendance at meetings
35	Karol Życzkowski	<i>Council of the Institute of Theoretical and Applied Informatics of the Polish Academy of Sciences</i> , year of establishment: 2015,

		function: member, tasks: attendance at meetings
36	Karol Życzkowski	<i>Editorial Board of Quantum magazine</i> , year of appointment: 2017, function: member of the Editorial Committee, tasks: participation in meetings
37	Jerzy Kijowski	<i>Magazine Acta Physica Polonica A</i> , function: member of the Editorial Committee, tasks: participation in meetings
38	Jerzy Kijowski	<i>Journal of Geometry and Physics</i> , function: member of the Editorial Committee, tasks: participation in meetings
39	Jerzy Kijowski	<i>Magazine Reports on Mathematical Physics</i> , function: member of the Editorial Committee, tasks: participation in meetings
40	Jerzy Kijowski	<i>Scientific Council of the Institute of Mathematics of the Polish Academy of Sciences</i> , function: member of the Council, tasks: participation in meetings
41	Lech Mankiewicz	<i>CTP PAS Scientific Council</i> , year of appointment: 2001, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96 item 619).
42	Lech Mankiewicz	<i>CAMK PAS Scientific Council</i> , year of appointment: 2013, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96, item 619).
43	Lech Mankiewicz	<i>Scientific Council of the National Centre for Quantum Informatics in Gdańsk</i> , year of establishment: 2011, function: member of the Council, tasks: tasks resulting from the Act on day-to-day supervision over the activities of the Institute, taking care in particular of the high level of its scientific activity and the development of people starting their scientific careers, as well as other tasks resulting from Article 55 of the Act on the Polish Academy of Sciences (Journal of Laws 2010 No. 96 item 619).
44	Lech Mankiewicz	<i>Programme Council of the Science Festival</i> , year of establishment: 2013, function: member of the Council, tasks: participation in decision-making on organizational and programmatic matters of the Science Festival in Warsaw
45	Lech Mankiewicz	<i>Council of the Open Science Foundation (IBB PAS)</i> , year of establishment: 2014, function: Member of the Council, tasks: Supervision of the day-to-day operations of the FNO, approval of technical reports
46	Lech Mankiewicz	<i>Expert Corps of the National Science Centre</i> , year of establishment: 2016, function: member, tasks: evaluation of research grant applications, participation in review PASels
47	Agnieszka Janiuk	<i>Delta - editorial committee</i> , year of appointment: 2009, function: member, tasks: substantive monitoring of the journal; constant contact with the Editorial Office and assistance in searching for interesting topics and acquiring authors; participation in meetings

		of the Committee and selection of an article nominated for the Dean's Award.
48	Agnieszka Janiuk	<i>Polish Astronomical Society</i> , year of establishment: 2003, function: member, tasks: participation in discussions and informal collegiate initiatives of PTA; participation in the Assembly and General Assembly of Members; undertaking and issuing opinions on initiatives related to the promotion and popularization of astronomy in Poland.
49	Agnieszka Janiuk	<i>European Astronomical Society</i> , year of establishment: 2016, function: member, tasks: Participation in EWASS symposium, co-creation of the programme, proposing thematic scientific sessions; participation in informal peer discussions, undertaking and giving opinions on initiatives related to the popularization and promotion of astronomy in Europe.
50	Agnieszka Janiuk	<i>International Astronomical Union</i> , year of establishment: 2006, function: member, duties: Participation in the IAU Assembly; participation in the General Assembly of Members and informal peer discussions on the promotion and popularization of astronomy worldwide and the role of women in science; participation in votes on astronomical names; participation in sessions and meetings related to High Energy Astrophysics (Division D).
51	Agnieszka Janiuk	<i>CTP PAS Scientific Council</i> , year of appointment: 2011, function: member, tasks: participation in meetings of the Council and discussions on current CTP problems; participation in the committees for the doctoral dissertation.
52	Agnieszka Janiuk	<i>Expert Corps of the National Science Centre</i> , year of establishment: 2013, function: member, tasks: participation in Review PASels, evaluation of grant applications and project completion reports, in ST9 and ST PASels.
53	Agnieszka Janiuk	<i>Astronomy Committee of the Polish Academy of Sciences</i> , year of establishment: Function: member, tasks: participation in KA PAS meetings and e-mail discussions on topics related to the development of astronomy in Poland; providing opinions and taking initiatives to promote Polish science.
54	Wojciech Hellwing	<i>Polish Astronomical Society</i> , year of establishment: 2016, function: member, from 2017 member of the Board, tasks: participation in the works of the Board of PTA, organization of popular science stands, participation in the Young PTA Awards Committee, participation in the organizational works of the PTA Congress 2019, editing and writing grant applications of the DUN, assistance in editing post-conference materials, and others.
55	Wojciech Hellwing	<i>International Astronomical Union</i> , year of establishment: 2018, function: young member, tasks: departmental member: Division B Facilities, Technologies and Data Science, Division C Education, Outreach and Heritage, Division D High Energy Phenomena and Fundamental Physics, Division H Interstellar Matter and Local Universe, Division J Galaxies and Cosmology
56	Piotr Waluk	<i>Main Committee of the Physical Olympics</i> , year of establishment: 2016, function: member, tasks: participation in meetings, assistance in the organisation of the various stages of the Olympics, including the preparation and evaluation of

		competition tasks.
57	Oskar Słowik	<i>Polish Physical Society</i> , year of establishment: 2013, function: member, tasks: none
58	Jerzy Kijowski	<i>Programme Council of the Centre for Advanced Studies of the Warsaw University of Technology</i> , year of establishment: 2015, function: member of the Council, tasks: participation in decision-making on programme matters