



60th Anniversary Of Karpacz Winter School

Reflections On The Beginnings Of The Karpacz Winter Schools In Theoretical Physics

Andrzej Pękalski

The idea to organize a winter school of theoretical physics came into being during the Summer School of Theoretical Physics organized in 1963 in Zakopane by the Jagiellonian University. Together with my friend Wiesław Wasilewski, who later moved to Radom and became a rector at the Radom Institute of Technology, I approached prof. Jan T. Łopuszański, who was also at the Zakopane School. He liked the idea and supported us when we presented this concept to prof. Jan Rzewuski, the director of our Institute at the time.

As the site of the future schools Karpacz has been chosen. There were several reasons for that. Karpacz is a nice, not too large, resort town, not too far from Wrocław (about 120 km SW). Moreover, University of Wrocław has three boarding houses there. An additional asset, important for prof. Rzewuski who was an excellent skier, and for some of us, is that in Karpacz there are quite good ski slopes. The houses, called Krokuses are beautifully located, on the outskirts of town, close to a forest.

Choosing the place and the time winter of course, since there already was a very good Summer School in Zakopane and moreover you cannot ski in summer in Poland, was just the first step. Nobody at that time at our university had any experience in organizing an international conference or a school. It was nearly half a century ago, in the prehistoric times before fax, copying machines, email etc were commonly used. All these facilities were replaced by the so called Iron Curtain which quite effectively separated the West from the East. The problems were

many. From finding physicists willing to come to a completely unknown place for an unknown school, to finding funds. There was a problem even more difficult. Any larger scale gathering had to be approved by the so-called authorities, which means political officials from the Polish communist party. We had to convince them that invitation of Western physicists would be beneficial for building socialism in Poland. Of course, now it looks like a joke, but at that time there was nothing funny in it. We had no experience in organization of international meetings, but also those officials had none, so by persuasion, luck or else, we got the necessary OK from them. We had to complete the list of lecturers well in advance, since it also had to be approved and there was no internet, mobile phones etc. Yes, stationary telephones have been already invented and even in use, but the Iron Curtain screened them too. To get a connection to a foreign number one had to wait sometimes for a day or two. Letters sent, we waited for answers and the procedure took months.

Officially the director of the first school, held in 1964, was prof. Roman S. Ingarden (one of the founding fathers of what eventually became our Institute. Later he moved to M. Kopernik University in Toruń). However the person who was the heart, brain and who did nearly all the works, was Walerian Ziętek. (After 1968 he left our University for the Polish Academy of Sciences.) He was a true volcano of energy, full of ideas how to solve problems, never giving up. He had a group of dedicated, young coworkers around him, helping in many ways. People were arriving to Karpacz at that time either by bus or by train, as private cars were rare in Poland. Train station and bus stops are rather far away from Krokuses. Therefore a group of younger organizers were designated to go to the station or bus stop and fetch arriving lecturers. The guests were then escorted to Krokuses where another group was waiting with a cup of hot Polish tea (you may imagine what it means). Such a highly personalized treatment was not left unnoticed and it was setting from the very beginning a special atmosphere. Safe arrival of the lecturers did not

mean the end of problems. The School lasted two weeks and after a few days electricity was disconnected in all Karpacz. Although at that time there was no multimedial or overhead projectors, light was needed. The problem was solved by Ziêtek, who contacted the nearest military base and borrowed a field generator. It was quite noisy, but provided electricity and Krokuses were the only houses in Karpacz which had lights. Problems with electricity happened also at later Schools. When again power has been cut off, the director of the School addressed a friendly parish church and got from the priest a bundle of large candles. Our lecture room resembled a bit a church, but the lectures could go on. Improvisation was the motto of the School. Poles are rather good in this game, so the School was a success.

The first school had no definite profile and it reflected rather the spectrum of friends of our professors. We had therefore lectures about quantum field theory, mathematical physics, magnetism, superconductivity, elementary particles and nuclear physics. The official language of the School was English, however not all lecturers were fluent enough to give a good lecture in that language. Sometimes a lecture started in English only to switch to Polish or Russian after half an hour and only then we could appreciate the skill of the lecturer. Some of the lectures were longer and had a tutorial character, others were more appropriate for a conference. The rule however was to leave ample time for discussions. They were held, of course, in the lecture room, but also during walks in the nearby forest or on the ski slopes and invariably ended in Krokuses over a cup of tea, or something stronger. Most of the lecturers were not experienced skiers, yet they enjoyed learning how to ski and were not afraid of falling into fresh snow. Night life in Karpacz at that time was practically non-existing, Krokuses are far away from the town, hence all activity was restricted to the three Krokuses and created very good conditions for long discussions and immediate contacts.

Later on, when more physicists from the West came, they were quite often surrounded by young Poles trying to improve their English. We had very few opportunities to talk to native speakers and since they were genuinely interested in the life behind the Iron Curtain, such discussions were lively and long. Younger people were, on one hand seeking Western physicists, but on the other hand were afraid of such contacts since the level of their English was not very high. English was seldom taught at school and proliferating now private courses did not exist. Our professors, who wanted us to profit from the school in all aspects, invented a very clever stratagem. At the entrance to the dining room a deck of playing cards was put. Each person entering the room had to draw a card, which showed him/her the place to sit, since on the tables another deck of cards was distributed.

The School ended with a banquet, a real feast prepared by Ms. H. Tyłowa, who was running the Krokuses. At the common table, after several rounds of *na zdrowie* toasts, a tournament of limericks was held. It became a tradition which lasted many years. Unfortunately practically no verses survived.

In the following, 1965, year the second Karpacz Winter School was organized. This time the official director was W. Ziętek and the topic was *Symmetries in Particle and Condensed Matter Physics*. The subject is so vast that again it was a cross section of nearly all theoretical physics glued together by the common denominator group theory. The number of lecturers did not grow there were 14 of them at the first School and 11 at the second. Proceedings of the School were not published, but printed as a collection of papers available to a very restricted readership. The third School was the first to be devoted to one branch of theoretical physics statistical and many body physics. The School attracted more prominent lecturers. Later we had lecturers who got the Nobel prize after lecturing on our Schools and some who got it before. The proceedings of this and several subsequent Schools were published in *Acta Universitatis Wratislaviensis*. Only in 1974 Jerzy Przystawa, who was the director of the XI School, persuaded

authorities, at the University and elsewhere, that the proceedings should be sent to a publishing house having world wide distribution network. Since that time, with some exceptions, the proceedings are published either as books (Plenum, Harwood, Springer, World Scientific) or as separate issues of leading scientific journals.

The topics of the School changed each year, reflecting scientific interests and research programs undertaken in our Institute.

The School rather quickly became known in the international scientific community. Karpacz was a very good meeting place for the Polish, Eastern and Western physicists, since at that time very few Russian physicists were allowed to visit Western universities. They were, in principle, able to come to Poland. This was not however quite clear and straightforward. It happened that we had invited from some institute professors X and Y. After a long time we received a nice letter from the head of that institute informing us that professors X and Y (both top physicists) are unable to come. Instead they are sending professors A and B (unknown to us). We politely declined that offer and kept insisting on X and Y. Sometimes it even worked.

Karpacz Winter Schools were therefore a rare opportunity for the Western and Russian physicists to meet and discuss. That could be one reason for the success of the School. The other was a unique atmosphere, a kind of home made hospitality. We really enjoyed organizing the Schools, we looked forward to meeting people known to us as authors of important papers or our textbooks. We have not yet been spoiled by many contacts and traveling all over the world. Needless to say, the present day situation is normal and much better. Our guests probably felt that atmosphere and, as can be judged from the inscriptions they left in our memorial book, enjoyed it. Many of them came for the second or third time. Winter of 1979 was particular cold and snowy in Poland. Trains were running

rather randomly and were much delayed. Our lecturers (N. Ashcroft, M. Ausloos, D. Mermin and some others) after arriving by plane to Warsaw had to wait there many hours (some even 16!). Our friends in Warsaw took care of them and finally put them into the train to Karpacz. We met them at the Wrocław station and provided the group with hot tea, sandwiches and an emergency bottle. The party arrived to Karpacz in a jolly good mood, as they described it.

One of the high points of the Schools was the excursions into the mountains. Usually the Sunday in the middle of the School was devoted either to skiing or to walking in the mountains. Sudeety are not Alps, but sometimes a sudden storm may appear. This happened once to a group of participants guided by Maria Stêlicka on an excursion to the peak of niezka. Everything ended safely thanks to the experience of the guide. On the next day (but certainly not before) the excursion was a matter of pride for its participants, as their raw meat à la Jack London. A Norwegian church from the 13 century, situated nearby, has usually been the target of the less ambitious excursions. One or two evenings the participants spent on grilling sausages over a camp-fire near Krokuses or on a walk with torches to a mountain shelter for a glass of hot wine. When there was enough snow, an evening trip on sledges, also with torches, pulled by horses, was organized.

Politics entered into our Schools not only when we had to get permission from the local White House for invitation of Western physicists. In 1968 we have been preparing the next School. In March 1968 there were infamous actions taken by communist regime against Jews and intellectuals. To each invitation letter we have sent, a list of invited lecturers was attached. Among them was professor D. Mattis of the Yeshiva University. To our big concern, we got no answers to the letters. Finally one of our Russian friends showed us the letter which he received from Prof. Mattis. In it he called for a boycott of the School as an answer to the antisemitic actions taken by the

government. His appeal was successful and from the West came only A. Cracknell from Essex and J.M. Zuckermann (then at the Imperial College in London) to, as he put it, see the Polish antisemitism first hand. It seems that he enjoyed his stay since at the time of leaving he was calling himself (in Polish) bloody capitalist and we stayed in touch for some time. As could be expected, the boycott of our School has no effect whatsoever on the communist officials, but spoiled a possibly good School. Next time when politics had a devastating effect on the School, was in 1982, when the martial law was declared in Poland. All gatherings were called off and of course the School was canceled. We had no way to communicate with the outside world and inform the lecturers.

Over the years the School gained a very good reputation all over the world and while inviting even the best specialists, we did not have to explain them what is the Karpacz Winter School of Theoretical Physics. Although the organizers got some experience, yet problems and place for improvisation remained. Starting from the late 70's shortage of food, specially meat, was endemic. People running the Krokuses put things clearly: We can feed you decently, but you have to provide meat. Therefore we had to look for help in the official structure. Once it was a lady, friend of the director, a vice-president of the local government. Another time we contacted one of our friends, a physicist, who was an important person in the local party. He managed to get us a special permission to buy meat in Wroc³aw. Then we had to transport it to Karpacz, which at the time belonged to another voivodship and transporting meat across the border required again a special permission, which we could not get. Therefore we simply smuggled the meat in a car trunk.

After many years the Schools moved away from Karpacz, but still have it in its name, to other localities, always close to the mountains and ski slopes. Why did we move from the wonderful atmosphere of the Krokus houses, where every corner has a story to tell, like that of a very famous physicist dancing, at 3 am, a part of Swans Lake or a

midnight ski trip to the mountains? Krokuses have no real lecture room, as you may see on the photos in this booklet. It could accommodate at most some 35 people and later on Schools have nearly 100 participants. Boarding houses themselves could also room about 40 people and the standard of the rooms was OK in the old pioneering times, but not later, when people are expecting much better conditions. We have tried various solutions to keep the Winter Schools in Karpacz, but nothing really worked.

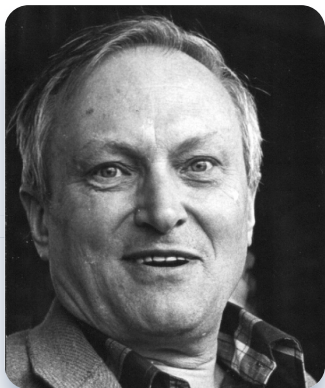
Now things are of course much easier and finding a place where a School could be organized is not a problem. Since the conservation of problems law holds, now it is much more difficult to find money for financing a School. Karpacz offers several possibilities of a good conference center, unfortunately not for our budgets.

Improvisation is not needed anymore, so it is gone, but with it some of the flavor of the Schools vanished too.

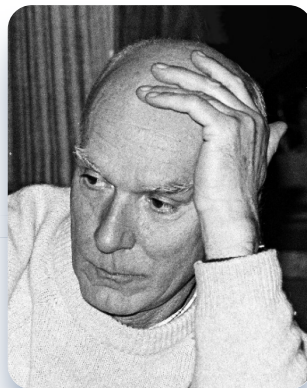
Since many years together with the Karpacz Schools a Kindergarten of Theoretical Physics is organized. The aim is to give a chance for Polish and foreign students of theoretical physics to meet colleagues from other countries as well as known physicists, invite them for special lectures, and ask questions when no older people are around. Students organize their own seminars, where they feel more free to discuss than on the Schools. The Kindergartens were successful and many of our lecturers were quite happy after meeting the students and discussing with them.

Many thanks to Monica and to Jerzy for their help.

Founding Fathers



Jan T. Łopuszański



Jan Rzewuski



Walerian J. Ziętek



Wiesław Wasilewski



Andrzej Pękalski

Group Photos



Group Photo of the first Karpacz Winter School



1973 Karpacz Winter School



1978 Karpacz Winter School



1989 Karpacz Winter School



1991 Karpacz Winter School

Previous Schools

60th Karpacz Winter School on Theoretical Physics & WE-Heraeus Physics School

Inst. Theor. Physics, Univ. of Wrocław & Hotel "Artus", Karpacz: May 16 - 25, 2024

Phase transitions - From the Laboratories to the Cosmos

Directors: David Blaschke, Krzysztof Redlich, Oleksii Ivanytskyi

Institutions: Institute of Theoretical Physics of the University of Wrocław

59th Winter School of Theoretical Physics and third COST Action CA18108 Training School

Pałac Wojanów, Poland: February 12 - 21, 2023

Gravity - Classical, Quantum and Phenomenology

Directors: Jerzy Kowalski-Glikman (University of Wrocław) - Head, Tomasz Trzeźniewski (University of Wrocław) - Secretary

Organizers: Giacomo Rosati (University of Wrocław), Remigiusz Durka (University of Wrocław), José Manuel Carmona (University of Zaragoza, Spain), Armando di Matteo (INFN Turin, Italy), Rodrigo Gracia Ruiz (IPHC, Strasbourg, France), Giulia Gubitosi (Università di Napoli "Federico II", Italy), Carlos Pérez de los Heros (Uppsala University, Sweden), Christian Pfeiffer (ZARM, University of Bremen, Germany), Tomislav Terzić (University of Rijeka, Croatia)

Institutions: Institute of Theoretical Physics, University of Wrocław, Poland

Young scientists' workshop and 58th Karpacz Winter School of Theoretical Physics

Karpacz: June 19 - 25, 2022

Heavy Ion Collision: From First to Last Scattering

Organizers: Pasi Huovinen, David Blaschke, Tobias Fischer, Michał Marczenko, Valeriya Mykhaylova, Krzysztof Redlich, Michał Szymanski

Institutions: Institute of Theoretical Physics, University of Wrocław

57th Karpacz Winter School of Theoretical Physics and PHAROS COST Action CA16214 Training School

Karpacz: June 13 - 19, 2021

Equation of State of dense matter and multimessenger astronomy

Directors: David Blaschke

Organizers: David Blaschke, Sebastiano Bermuzzi, Tobias Fischer, Armen Sedrakian, Laura Tolos, Ludwik Turko

56th Karpacz Winter School in Theoretical Physics

Karpacz: February 24 - 28, 2020

Superfluidity and Transport for Multimessenger Physics of Compact Stars

Directors: Armen Sedrakian

Organizers: Armen Sedrakian (Uni. Wrocław, Poland and FIAS, Germany, Chair), David Blaschke (Uni. Wrocław, Poland and JINR, Russia), Tobias Fischer (Uni. Wrocław, Poland), Ian Jones (Uni. Southampton, UK), Bryn Haskell (CAMK, Poland), Constanca Providencia (Uni. Coimbra, Portugal)

55th Karpacz Winter School of Theoretical Physics and ChETEC COST Action CA16117 Training School

Karpacz, Artus Hotel: February 24 - March 02 2019

Nuclear astrophysics in the multi-messenger era

Directors: Tobias Fischer, Daniel Bemmerer, David B. Blaschke,

Organizers: Niels-Uwe Bastian, Daniel Bemmerer, David B. Blaschke, Mateusz Cierniak, Tobias Fischer, Michał Marczenko, Ewa Niemczura, Krzysztof Redlich, Chihiro Sasaki, Ludwik Turko

Institutions: Institute of Theoretical Physics at the University of Wrocław, Poland; Nuclear Astrophysics group of the Helmholtz Zentrum Dresden-Rossendorf (HZDR), Germany

54th Winter School of Theoretical Physics

Lądek Zdrój: February 18 - 24, 2018

Simplicity of Complexity in Economic and Social Systems

Organizers: Dariusz Grech (chairman), Janusz Miśkiewicz, Remigiusz Durka

Institutions: Institute of Theoretical Physics University of Wrocław, Ministry of Science and Higher Education, Polish Physical Society - section: "Physics in Economy and Social Sciences" (FENS)

53th Karpacz Winter School of Theoretical Physics

Karpacz: February 26 - March 04 2017

Understanding the Origin of Matter from QCD

Organizers: David Blaschke, Krzysztof Redlich, Chihiro Sasaki (chair), Ludwik Turko

Institutions: Institute of the Theoretical Physics, University of Wrocław and THOR COST Action Training School

Proceedings: Understanding the Origin of Matter. Perspectives in Quantum Chromodynamics

Editors: David Blaschke, Krzysztof Redlich, Chihiro Sasaki, Ludwik Turko

52nd Winter School of Theoretical Physics

Lądek Zdrój: February 14 - 21, 2016

Theoretical Aspects of Neutrino Physics

Directors: Jan Sobczyk

Organizers: Jan Sobczyk, Krzysztof Graczyk, Cezary Juszcak, Jakub Żmuda

Institutions: Institute of Theoretical Physics, University of Wrocław

51st Winter School of Theoretical Physics

Lądek Zdrój: February 09 - 14, 2015

Irreversible dynamics: nonlinear, nonlocal and non-Markovian manifestation

Organizers: Wojciech Cegła, Andrzej Frydryszak, Piotr Garbaczewski, Lech Jakóbczyk (Head), Robert Olkiewicz

Institutions: Institute of Theoretical Physics, University of Wrocław and Institute of Physics, University of Opole

Proceedings: The proceedings of the 51st Winter School of Theoretical Physics are published in the Reports on Mathematical Physics Volume 77, Issue 3, Pages 265-416 (June 2016)

Editors: Lech Jakóbczyk, Wojciech Cegła, Andrzej Frydryszak, Piotr Garbaczewski, Robert Olkiewicz

50th Karpacz Winter School of Theoretical Physics

Karpacz: March 02 - 09, 2014

Quantum Criticality in Condensed Matter: Phenomena, Materials and Ideas in Theory and Experiment

Organizers: J. Jędrzejewski (Univ. of Wrocław), D. Kaczorowski (Inst. Low. Temp & Str. Res.), T. Kopeć (Inst. Low. Temp & Str. Res.), W. Cegła, M. Adamski (Univ. of Wrocław), M. Samsel-Czekala, A. Pikul, T. Zaleski (Inst. Low. Temp & Str. Res.)

Institutions: Institute of Theoretical Physics, University Of Wrocław; Institute of Low Temperature and Structure Research, Polish Academy of Sciences; Committee for Physics of the Polish Academy of Sciences (Warsaw); Polish Academy of Arts and Sciences (Cracow)

Proceedings: Quantum Criticality in Condensed Matter: Phenomena, Materials and Ideas in Theory and Experiment. World Scientific, Singapore 2015, ISBN 978-981-4704-08-3

Editors: J. Jędrzejewski

49th Winter School of Theoretical Physics

Łądek-Zdrój: February 10 - 16, 2013

Cosmology and non-equilibrium statistical mechanics

Organizers: Z. Haba, A. Borowiec, Z. Popowicz, P. Ługiewicz, A. Blaut, M. Kamionka, A. Wojnar, P.Gusin

Institutions: University of Wrocław

48th Karpacz Winter School of Theoretical Physics

Łądek-Zdrój: February 04 - 11, 2012

Cosmic Matter in Heavy-Ion Collision Laboratories

Organizers: L. Turko, D. Blaschke, K. Redlich, A. Wergieluk, R. Łastowiecki

Institutions: University of Wrocław, JINR Dubna

47th Karpacz Winter School

Lądek-Zdrój: February 07 - 12, 2011

Simple Models for Complex Systems

Directors: Katarzyna Sznajd-Weron

Organizers: Grzegorz Kondrat, Piotr Nyczka, Krzysztof Pawlikowski, Sebastian Szkoda

Institutions: University of Wrocław, Polska Akademia Nauk

46th Karpacz Winter School

Lądek-Zdrój: February 08 - 13, 2010

Quantum Dynamics and Information: Theory and Experiment

Directors: Robert Olkiewicz

Organizers: Wojciech Cegła, Andrzej Frydryszak, Piotr Garbaczewski, Lech Jakóbczyk, Burkhard Kaempfer,

Institutions: University of Wrocław, Opole University

Proceedings: Quantum Dynamics and Information. World Scientific Publishing, Singapore 2010, ISBN-13 978-981-4317-43-6

Editors: R. Olkiewicz, W. Cegła, A. Frydryszak, P. Garbaczewski, L. Jakóbczyk

45th Karpacz Winter School

Lądek-Zdrój: February 02 - 11, 2009

Neutrino interactions: from theory to Monte Carlo simulations

Directors: J. Sobczyk

Proceedings: Acta Physica Polonica B Vol. 40, No. 9, September 2009

44th Karpacz Winter School

Lądek-Zdrój: February 18 - 29, 2008

The Complex Physics of Compact Stars

Directors: David Blaschke, coordinator Ludwik Turko

Organizers: Artur Duda (IFT of the University of Wrocław) Secretary: Daniel Zablocki (IFT of the University of Wrocław)

43rd Karpacz Winter School

Lądek-Zdrój: February 05 - 11, 2007

Condensed Matter Physics in the Prime of XXI Century: Phenomena, Materials, Ideas, Methods

Directors: J. Jędrzejewski, R. Lemański, M. Richter, A. Wójs

Organizers: Treasurer: Artur Duda, Secretary: Volodymyr Derzhko

Proceedings: "Condensed Matter Physics in the Prime of XXI Century: Phenomena, Materials, Ideas, Methods", World Scientific Publishing, Singapore 2008, ISBN-13 978-981-270-944-8 ISBN-10 981-270-944-4

Editors: J. Jędrzejewski

42th Karpacz Winter School

Lądek-Zdrój: February 06 - 11, 2006

Current Mathematical Topics in Gravitation and Cosmology

Directors: A. Borowiec, M. Francaviglia

Proceedings: International Journal of Geometric Methods in Modern Physics vol. 4 Number 1, pp. 208 (2007)

Editors: G. Allemandi, A. Borowiec, A. Francaviglia

41th Karpacz Winter School

Lądek-Zdrój: February 06 - 12, 2005

Diffusion and Soft Matter Physics

Directors: A. Pękalski

Proceedings: Physica vol. A357, pp. 189-371 (2005)

Editors: Z. Koza, A. Pękalski

40th Karpacz Winter School

Lądek-Zdrój: February 04 - 14, 2004

Quantum Gravity Phenomenology

Directors: G. Amelino-Camelia, J. Kowalski-Glikman

Proceedings: ISSN 1616-6361; ISBN 978-3-540-25263-4; Book Series Lecture Notes in Physics; pp. 413 Volume 669 (2005); Publisher Springer Berlin/Heidelberg

Editors: G. Amelino-Camelia, J. Kowalski-Glikman

39th Karpacz Winter School

Lądek-Zdrój: February 02 - 12, 2003

Foundations of Quark-Gluon Plasma

Directors: L. Turko, J. Rafelski

38th Karpacz Winter School

Lądek-Zdrój: February 06 - 15, 2002

Dynamics of Dissipation

Directors: P. Garbaczewski, R. Olkiewicz

Proceedings: Lecture Notes in Physics vol. 597, pp. 512 (2002) "Dynamics of dissipation"; ISSN 0075-8450; CODEN LNPHA4; ISBN 3-540-44111-5;

Editors: P. Garbaczewski, R. Olkiewicz

37th Karpacz Winter School

Karpacz: February 06 - 15, 2001

New Developments in Fundamental Interaction Theories

Directors: J. Lukierski, J. Rembielinski

Proceedings: AIP Conference Proceedings vol. 589, pp. 450 (2001)

Editors: :J. Lukierski, J.Rembielinski

36th Karpacz Winter School

Łądek-Zdrój: February 11 - 19, 2000

Exotic Statistical Physics

Directors: A. Pełalski

Proceedings: Physica A vol. 285, Nos. 1-2, pp. 238 (2000)

Editors: A. Pekalski, K.Sznajd-Weron

35th Karpacz Winter School

Polanica: February 02 - 11, 1999

Towards Quantum Gravity

Directors: J. Kowalski-Glikman, R. Kerner, J. Lewandowski, J.W. van Holten

Proceedings: Lecture Notes in Physics Vol. 541 pp. 376 (2000)

Editors: J. Kowalski-Glikman

34th Karpacz Winter School

Karpacz: February 16 - 22, 1998

From Quantum Mechanics to Quantum Technology

Directors: Z. Petru

33th Karpacz Winter School

Karpacz: February 13 - 22, 1997

Duality - String and Fields

Directors: Z. Hasiewicz, Z. Jaskolski

Proceedings: Nucl. Phys.B (Proc. Suppl.) vol. 61A, pp.188 (1998).

Editors: Z. Hasiewicz, J.Jaskolski, J.Sobczyk

32nd Karpacz Winter School

Karpacz: February 19 - 29, 1996

From Quantum Mechanics to Technology

Directors: J. Przystawa

Proceedings: From Quantum Mechanics to Technology, Lecture Notes in Physics, pp. 375, (1997) ISBN-10: 3540617922, ISBN-13: 978-3540617921, Springer-Verlag Telos

Editors: Z. Petru, J. Przystawa, K.Rapcewicz

31st Karpacz Winter School

Karpacz: February 13 - 24, 1995

Chaos, The Interplay Between Stochastics and Deterministic

Directors: P.Garbaczewski

Proceedings: Chaos - The Interplay Between Stochastic and Deterministic Behaviour Lecture Notes in Physics, vol. 457. (1995)

Editors: P. Garbaczewski, A.Weron, M.Wolf

30th Karpacz Winter School

Karpacz: February 14 - 26, 1994

Quantum Groups Formalism and Applications

Directors: J. Lukierski, Z. Popowicz, J. Sobczyk

Proceedings: Polish Scientific Publishers PWN, pp. 640 (1995) PWN, Warsaw

Editors: J. Lukierski, Z. Popowicz, J. Sobczyk

29th Karpacz Winter School

Kudowa Zdrój: February 15 - 27, 1993

Die Kunst of Phonons

Directors: T. Paszkiewicz, K. Rapcewicz

Proceedings: Plenum Press, London, Language: German, 444 pages, Springer (July 31, 1994) ISBN-10: 0306446774; ISBN-13: 978-0306446771

Editors: T. Paszkiewicz, K. Rapcewicz

28th Karpacz Winter School

Karpacz: February 12 - 29, 1992

Infinite Dimensional Geometry in Physics

Directors: R. Gielerak

Proceedings: Infinite Dimensional Geometry in Physics, special volume of Journal of Geometry and Physics, JGPHE5 11(1-4) 1-577 (1993); Elsevier, North-Holland; ISSN 0393-0440

Editors: R. Gielerak, A. Borowiec

27th Karpacz Winter School

Karpacz: February 18 - March 01 1991

Nonlinear Fields: Classical, Random, Semiclassical

Directors: P. Garbaczewski, Z. Popowicz

Proceedings: Nonlinear Fields: Classical, Random, Semiclassical, 720 pp. ISBN-10: 981020647X, World Scientific Publ. (1991)

Editors: P. Garbaczewski, Z. Popowicz

26th Karpacz Winter School

Karpacz: February 19 - March 01 1990

Ordering Phenomena in Condensed Matter Physics

Directors: Z. Galasiewicz, A. Pekalski

Proceedings: pp. 500, ISBN-10: 9810202482 ISBN-13: 978-9810202484; World Scientific Publishing (28 Nov 1990)

Editors: Z. Galasiewicz, A. Pekalski

25th Karpacz Winter School

Karpacz: February 20 - March 05 1989

Functional Integration, Geometry and Strings

Directors: Z. Haba, J. Sobczyk

Proceedings: Publisher: Birkhauser (Nov 1989) Language English ISBN-10: 0817623876 ISBN-13: 978-0817623876

Editors: Z. Haba, J. Sobczyk

24th Karpacz Winter School

Karpacz: February 13 - 27, 1988

Stochastic Methods in Mathematical Physics

Directors: R. Gielerak, W.Karwowski

Proceedings: Stochastic Methods in Mathematics and Physics, 412 pages, World Scientific Pub Co Inc (1989/08); ISBN-13: 978-9971506483; ASIN: 9971506483

Editors: R. Gielerak, W.Karwowski

23th Karpacz Winter School

Karpacz: February 16 - 28, 1987

Physics of Phonons

Directors: T. Paszkiewicz

Proceedings: Lecture Notes in Physics No. 285, (1987) Springer-Verlag, Berlin, DOI 10.1007/3-540-18244-6; ISBN 978-3-540-18244-3;

Editors: T. Paszkiewicz

22nd Karpacz Winter School

Karpacz: February 17 - March 01 1986

Fields and Geometry

Directors: A. Jadczyk

Proceedings: 675 pages, World Scientific Pub Co Inc (May 1986) ISBN-10: 9971501287; ISBN-13: 978-9971501280

Editors: A. Jadczyk

21st Karpacz Winter School

Karpacz: February 18 - March 02 1985

Spontaneous Symmetry Breakdown and Related Subjects

Directors: L. Michel, J. Mozrzykas, A. Pękalski

Proceedings: 493 pages, World Scientific Pub Co Inc (December 1985), ISBN-10: 9971978547; ISBN-13: 978-9971978549

Editors: L. Michel, J. Mozrzykas, A. Pękalski,

20th Karpacz Winter School

Karpacz: February 20 - March 03 1984

Static Critical Phenomena in Inhomogeneous Systems

Directors: A. Pękalski, J. Sznajd

Proceedings: Lecture Notes in Physics No. 206, pp. 376 (1984) Static Critical Phenomena in Inhomogeneous Systems Publisher Springer Berlin/Heidelberg ISSN 1616-6361; DOI 10.1007/3-540-13389-0 Wi

Editors: A. Pękalski, J. Sznajd

19th Karpacz Winter School

Karpacz: February 14 - 26, 1983

Supersymmetry and Supergravity

Directors: B. Milewski

Proceedings: Supersymmetry and Supergravity 1983, 586 pages Publisher: World Scientific Pub Co Inc (March 1984) ISBN-10: 9971950235; ISBN-13: 978-9971950231

Editors: B. Milewski

18th Karpacz Winter School

Karpacz: February 19 - March 04 1981

Gauge Field Theories: Theoretical Studies and Computer Simulations

Directors: W. Garczynski

Proceedings: Studies in High Energy Physics, Vol. 4, Harwood Acad. Publ., Chur Publisher: CRC (June 22, 1987) ISBN-10: 3718601214; ISBN-13: 978-3718601219;

Editors: W. Garczynski

17th Karpacz Winter School

Karpacz: February 22 - March 06 1980

Developments in the Theory of Fundamental Interactions

Directors: L. Turko, A. Pękalski

Proceedings: Studies in High Energy Physics, Vol. 3, Harwood Acad. Publ., Chur, 588 pages Publisher: Routledge; 1 edition (January 1, 1981) ISBN-10: 3718601044; ISBN-13: 978-3718601042

Editors: L. Turko, A. Pękalski

16th Karpacz Winter School

Karpacz: February 19 - March 03 1979

Modern Trends in the Theory of Condensed Matter

Directors: A. Pekalski, J. Przystawa

Proceedings: Lecture Notes in Physics No. 115, Springer-Verlag, Berlin; ISBN: 038709752X 9780387097527 (1980)

Editors: A. Pekalski, J. Przystawa

15th Karpacz Winter School

Karpacz: February 20 - March 04 1978

Mathematical Aspects of Quantum Field Theory

Directors: W. Karwowski

Proceedings: Acta Universitatis Wratislaviensis, No.519

Editors: A. Pękalski

14th Karpacz Winter School

Karpacz: March 07 - 20, 1977

Collective Effects in Condensed Media

Directors: Z. Galasiewicz

Proceedings: Acta Universitatis Wratislaviensis, No.436

Editors: T. Paszkiewicz

13th Karpacz Winter School

Karpacz: February 17 - 29, 1976

Recent Development in Relativistic Quantum Field Theory and Its Application

Directors: J. Lukierski

Proceedings: Acta Universitatis Wratislaviensis, No.389

Editors: J. Lukierski

12nd Karpacz Winter School

Karpacz: February 17 - March 02 1975

Functional and Probabilistic Methods in Quantum Field Theory

Directors: W. Garczynski

Proceedings: Acta Universitatis Wratislaviensis, No.368

Editors: B. Jancewicz

11st Karpacz Winter School

Karpacz: February 19 - March 04 1974

Magnetism in Metals and Metallic Compounds

Directors: J.Lopuszanski, A.Pekalski, J.Przystawa

Proceedings: Magnetism in Metals and Metallic Compounds, (ISBN 0306308657; ISBN 0-306-30865-7), Plenum Press, London

Editors: J.Lopuszanski, A.Pekalski, J.Przystawa

10th Karpacz Winter School

Karpacz: February 19 - March 04 1973

New Developments in Relativistic Quantum Field Theory

Directors: J. Lukierski

Proceedings: Acta Universitatis Wratislaviensis, No.207

Editors: J. Lukierski

9th Karpacz Winter School

Karpacz: February 16 - 28, 1972

Theory of Metals and the Many Body Problem

Directors: K. Wojciechowski

Proceedings: Acta Universitatis Wratislaviensis, No.181, Vol. 1 and 2

Editors: K. Wojciechowski

8th Karpacz Winter School

Karpacz: February 01, 1971

New Developments in Relativistic Quantum Field Theory and its Applications

Directors: J. Lukierski

Proceedings: Acta Universitatis Wratislaviensis, No.164, Vol. 1 and 2

Editors: J. Lukierski

7th Karpacz Winter School

Karpacz: February 01, 1970

Liquid Helium and Many Body Problems

Directors: Z. Galasiewicz

Proceedings: Acta Universitatis Wratislaviensis, No.141

Editors: Z. Galasiewicz

6th Karpacz Winter School

Karpacz: February 16 - March 01 1969

Group Theory and Statistical Physics of Condensed Matter

Directors: J. Przystawa

Proceedings: Mimeographed Lecture Notes of the University of Wroclaw

Editors: J. Przystawa

5th Karpacz Winter School

Karpacz: February 17 - March 01 1968

Axiomatic Approach to Quantum Field Theory and Many Body Problem

Directors: J. Lopuszanski

Proceedings: Acta Universitatis Wratislaviensis, No.98, 99, 113

Editors: J. Lopuszanski

4th Karpacz Winter School

Karpacz: February 17 - March 01 1967

Functional Methods in Quantum Field Theory and Statistical Mechanics

Directors: J. Rzewuski

Proceedings: Acta Universitatis Wratislaviensis, No.88, 89, 90

Editors: J. Rzewuski

3rd Karpacz Winter School

Karpacz: February 01, 1966

Statistical Physics of Condensed Matter

Directors: Z. Galasiewicz

Proceedings: Acta Universitatis Wratislaviensis, No.80

Editors: Z. Galasiewicz

2nd Karpacz Winter School of Theoretical Physics

Karpacz: February 17 - March 02 1965

Symmetries in Particle and Condensed Matter Physics

Directors: W. Ziętek

Proceedings: Mimeographed Lecture Notes of the University of Wrocław

Editors: W. Ziętek

1st Karpacz Winter School of Theoretical Physics

Karpacz: February 01, 1964

Particles, Fields and Superconductivity

Directors: R.S. Ingarden