

ADVANCED STUDIES INSTITUTE – SYMMETRIES AND SPIN

SPIN-Praha-2003

Prague, Czech Republic, July 12 – 19, 2003

Hosted by

- Charles University in Prague
Faculty of Mathematics and Physics

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TOPICS AND SCOPE:

Conference will include invited review talks, summaries of present experimental results, presentations and discussions of the large spin physics experiments potential.

Organized with the support of

- Joint Institute for Nuclear Research (JINR),
Dubna
- International Committee for Spin Physics
Symposia
- Charles University in Prague
- Czech Technical University in Prague
- Technical University in Liberec
- Institute of Scientific Instruments, Brno
- University of Florida, Gainesville

SUBJECTS TO BE COVERED:

- Spin physics and QCD
- Spin physics in electroweak interactions
- Spin physics beyond the standard model
- Spin physics in hadronic and nuclear reactions
- Spin structure of the nucleons
- Symmetries in nuclear structure
- Technics of spin physics experiments
- New projects and perspectives

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"ADVANCED STUDYIES INSTITUTES ON SYMMETRIES AND SPIN"

PRAHA-SPIN-YYYY

*The Advanced Studies Institutes Praha-SPIN-YYYY are organized on regular basis in Czech Republic with the **Faculty of Mathematics and Physics** of the **Charles University** serving as the host.*

The organization of ASI is supported by:

- Joint Institute for Nuclear Research, Dubna
- International Committee for Spin Physics Symposia
- Charles University and Czech Technical University in Prague, Technical University in Liberec, Institute of Scientific Instruments AS CR in Brno
- University of Florida, Gainesville, USA

Topics and scope

Prague spin physics meetings traditionally cover topics related to *symmetry and polarization phenomena in particle and nuclear physics.*

Characteristic features:

- to *take the broadest possible view of the discipline* by inviting distinguished speakers both *theoreticians* and *experimentalists* from different collaborations aiming at the research of symmetry phenomena in various physics disciplines.
- to *promote contacts* among researchers with different background of physics to review and discuss present status and perspectives of their research.
- to help to *form new collaborations*.
- to *help young researchers and students* to take active part in the respective research programmes.

Advanced Studies Institute combine:

- *advanced lecture program* of tutorial character, which span through several days
- several *advanced research workshops* dedicated to selected topics, which are concentrated to 2-3 days each. *Overview and dedicated talks* are presented here.
- *Seminars and/or students sessions*, where young researchers and students presented their results.
- *Poster sessions*.

The theoretical and experimental aspects of the large high priority spin physics experiments, which are going on or are under the preparation at existing accelerators at JINR, CERN, DESY, COSY, PSI, BNL, JLAB(CEBAF), GANIL, GSI, RIKEN, RCNP, JYFL etc. are presented and discussed.

Subjects which are covered usually include:

1. Symmetries and spin
2. Supersymmetry in particle and nuclear physics
3. Spin physics and QCD
4. Spin physics beyond the standard model
5. Spin physics in weak interactions in nuclei and atoms
6. Spin structure of the nucleons
7. Spin physics in hadronic and leptonic reactions
8. Spin physics in nuclear interactions
9. Spin physics with polarized photons
10. Polarized beams and polarimeters
11. Polarized ion sources and targets
12. New projects and perspectives

Participants, presentations Proceedings and WWW pages:

The number of participants is limited to about 100

The Proceedings of the Advanced Studies Institute are published as special volume of Czechoslovak Journal of Physics: *Czech.J.Phys.*

Proceedings published so far are:

SPIN-Praha-2004 Czech. J. Phys. 55 (2005) under preparation

SPIN-Praha-2003 Czech. J. Phys. 54 (2004) B1-B356

SPIN-Praha-2002 Czech. J. Phys. 53 (2003) B1-B508

SPIN-Praha-2001 Czech. J. Phys. 52 (2002) PI C1-C384

SPIN-Praha-2001 Czech. J. Phys. 52 (2002) PII C385-C740

SPIN-Praha-2000 Czech. J. Phys. 51 (2001) A1-A362

SPIN-Praha-1999 Czech. J. Phys. 50/S1 (2000) PI 1-210

SPIN-Praha-1999 Czech. J. Phys. 50/S1 (2000) PII 211-426

SPIN-Praha-1998 Czech. J. Phys. 49/S2 (1999) pp. 1-276

**Advanced Studies Institute – Symmetries and Spin",
Prague, July 17-26, 2005**

<http://thsun1.jinr.ru/~praha/2005/>

**Advanced Studies Institute – Symmetries and Spin",
Prague, July 5-10, 2004**

<http://cern.ch/asipraha/2004/SPIN> or

<http://thsun1.jinr.ru/~praha/2004/>

**"Advanced Studies Institute - Physics at LHC",
Prague, July 6-12, 2003**

<http://cern.ch/asipraha/2003/LHC> or

<http://thsun1.jinr.ru/~praha/2003/LHC/>.

**"Advanced Studies Institute - Symmetries and Spin",
Prague, July 12-19, 2003**

<http://cern.ch/asipraha/2003/SPIN> or

<http://thsun1.jinr.ru/~praha/2003/SPIN/>.

**"Advanced Study Institute on Symmetries and Spin",
Prague, July 14-27, 2002**

<http://cern.ch/mfinger/praha2002> or

<http://thsun1.jinr.ru/~praha/2002/>

**"Advanced Study Institute on Symmetries and Spin",
Prague, July 15-28, 2001**

<http://cern.ch/mfinger/praha2001> or

<http://thsun1.jinr.ru/~praha/2001/>

**"Advanced Study Institute on Symmetries and Spin",
Prague, July 17-22, 2000**

<http://thsun1.jinr.ru/~praha/2000/>.

**ADVANCED STUDIES
INSTITUTE**

"SYMMETRIES AND SPIN"

(SPIN-PRAHA-2003)



Prague, Czech Republic

July 12 - 19, 2003

GENERAL INFORMATION

The next in the series of Prague meetings on Spin Research Program

"ADVANCED STUDIES INSTITUTE -- SYMMETRIES AND SPIN"
(SPIN-Praha-2003)

tribute to the memory of Vernon W. Hughes

was organized with the support of

- Joint Institute for Nuclear Research, Dubna, Russia
- International Committee for Spin Physics Symposia
- [Charles University](#), Prague
- [Czech Technical University](#), Prague
- [Technical University in Liberec](#)
- [Institute of Scientific Instruments, Academy of Sciences of Czech Republic](#), Brno
- COMPAS Research and Development Consortium, Turnov, Czech Republic
- [University of Florida](#), Gainesville

and hosted by

- Charles University in Prague, [Faculty of Mathematics and Physics](#)

ORGANIZING COMMITTEE

M. Finger (Prague)	<i>Chair</i>	Miroslav.Finger@cern.ch
A.V. Efremov (Dubna)	<i>Co-Chair</i>	efremov@thsun1.jinr.ru
G. Mitselmakher (Florida)	<i>Co-Chair</i>	mitselmakher@phys.ufl.edu
O. Selyugin (Dubna)	<i>Scientific Secretary</i>	selugin@thsun1.jinr.ru

SPIN-Praha-2003 Scientific Programme: Summary:

- **7** working days
- **24** scientific sessions
- **61** presentations
- **2** abituary lectures
- **4** series of lectures
- **2** public lectures
- **24** overview talks
- **16** dedicated presentations
- **9** neutrino and astrophysics session
- **4** poster session

Participants

There were 98 participants from 15 countries,
JINR and CERN taking part in Praha-SPIN-2003

32	-	Czech Republic
26	-	JINR
11	-	USA
5	-	Germany
5	-	Japan
5	-	RF
4	-	Italy
2	-	Poland
1	-	Austria
1	-	Belarus
1	-	Bulgaria
1	-	Canada
1	-	Finland
1	-	France
1	-	Grece
1	-	Slovakia

Scientific Programme:

Abituary to Vernon W. Hughes:

Gisbert zu Putliz: *“Muonium”*

Abhay Deshpande: *“Vernon W. Hughes the last decade 1993-2003”*

Lectures:

Enrico Predazzi: *“General introduction on diffraction”*

Alexander Belkov: *“Experimental and theoretical status of CP violation”*

Emlyn Hughes: *“Polarized DIS”*

Taka Kajino: *“QCD-driven cosmological nucleosynthesis and supernova nucleosynthesis”*

Public lectures:

Serguey Kapitsa: *“The statistical theory of global population growth”*

Gordon Cates: *“Medical imaging with laser polarized noble gases”*

Overview Presentations:

COMPASS:

Miroslav Finger

JlabA:

Gordon Cates

JlabB:

Rafaella de Vita

JlabC:

Oscar Antonio Rondon

HERMES:

Klaus Rith

Ingrid-Maria Gregor

RHIC:

Enrico Predazzi

RHIC and AGS:

Harold Spinka

RHIC PHENIX:

Kenneth Barish

RHIC STAR:

Michail Tokarev

Larisa Nohach

Harold Spinka

RNCP:

Kichiji Hatanaka

TRIUMF:

Desmond W. Ramsay

JINR NUCLOTRON:

Pavel Rukoyatkin

Vasily Sharov

Leonid Strunov

IHEP Protvino:

Larisa Nohach

JINR RIBF: Ruben Oganessian

**HRIBF Oak Ridge: Daniel Stracener
Robert Varner**

**RIKEN RIBF: Akihiro Yoshimi
Jiro Murata**

GSI: Gottfried Munzenberg

Dedicated Presentations:

Theory:

**Phil Ratcliffe, Helmut Leeb, Anatoly Efremov,
Dimiter Stamenov, Sergey Goloskokov, Valeriy
Luboshitz, Marian Kolesar, Pavel Starovojtov,
Michail Tokarev, Oleg Selyugin, Eduard Kuraev,
Josef Manjavidze, Petr Zavada**

Experiment:

Vadim Novitski, Zdenek Dlouhy, Jan Blaha

Neutrino and Astrophysics Session:

- | | |
|---------------------------|---|
| John Vergados | - <i>Theoretical aspects of dark matter physics</i> |
| Serguey Petcov | - <i>Neutrino masses and mixing</i> |
| Jouni Suhonen | - <i>Neutrino and dark matter physics</i> |
| Taka Kajino | - <i>Dark matter, energy and radiation</i> |
| Hiro Ejiri | - <i>Future experiments 2beta</i> |
| Jochen Bonn | - <i>KATRIN Project</i> |
| Corrine Augier | - <i>NEMO Project</i> |
| Ziemowid Sujkowski | - <i>Neutrino less 2beta decay</i> |
| Hiro Ejiri | - <i>MOON Project</i> |

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**(SPIN-PRAHA-
2004)**



Prague, Czech Republic

July 5 - 10, 2004

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- [Technical University in Liberec](#)
- [Institute of Physics, Academy of Sciences of Czech Republic](#)
- [Institute of Scientific Instruments, Academy of Sciences of Czech Republic](#), Brno
- [University of Florida](#), Gainesville

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G. Mitselmakher (Florida)	<i>Co-Chair</i>	mitselmakher@phys.ufl.edu
O. Selyugin (Dubna)	<i>Scientific Secretary</i>	selugin@thsun1.jinr.ru

SPIN-Praha-2004 Scientific Programme

Summary:

- **6** working days
- **19** scientific sessions
- **66** presentations
- **2** series of lectures
- **18** overview talks
- **20** dedicated presentations
- **8** “pentaquark” session
- **8** “students” session
- **8** poster session

Participants

There were 85 participants from 9 countries,
JINR and CERN taking part in Praha-SPIN-2004

- 27 - Czech Republic
- 25 - JINR
- 7 - Germany
- 6 - USA
- 6 - Italy
- 5 - RF
- 4 - Japan
- 3 - France
- 1 - Hungary
- 1 - Israel

Lectures :

Eva-Maria Kabuss: “The spin structure of the nucleon”

Overview Presentations :

COMPASS – *muon programme*

Franco Bradamante

Eric Weise

Norihiro Doshita

COMPASS – *hadron programme*

Marialaura Colantoni

Andrea Ferrero

JlabA:

Nilanga Liyanage

JlabB:

Ralph Mineharp

JlabC:

Frank Wesselmann

HERMES:

Klaus Rith

RHIC PHENIX:

Alexander Bazilevski

RHIC STAR:

Yuri Panebratsev

JINR NUCLOTRON: **Alexander Malakhov**

Vasili Sharov

Anatoli Litvinenko

Bogdan Vashilishin

Alexander Isupov

RNCP/Spring8:

Hiro Ejiri

LEPS/Spring8:

Tomoaki Hotta

GSI FAIR:

Carsten Schwarz

GSI PANDA:

Maria-Pia Bussa

GSI Lol:

Marco Maggiora

Dedicated Presentations:

Theory:

Anatoly Efremov, Oleg Teryaev, Alexander Sidorov, Egle Thomasi-Gustavsson, Oleg Selyugin, Sergo Gerasimov, Alexander Dorokhov, Igor Anikin, Rufat Mir-Kasimov, Nina Golovanova, Alexander Burinski

Experiment:

Ricardo Alarcon, Frank Maas, Anatoli Beda, Daisuke Kameda, Alexey Aldushenkov, Alexander Prokofiev

Pentaquark Session:

Marek Karliner	-- theory overview
Daniel Barna	-- NA49
Jaroslav Cvach	-- H1 DESY
Tomoaki Hotta	-- LEPS/SPring8
Patrizia Rossi	-- JLab
Hans-Wolfgang Siebert	-- WA89
Michael Ostrick	-- experimental overview

Students Session:

Miroslav Kral, Antonin Kral, Tomas Liska, Jan Valenta, Alexander Morozov, Roman Shindin, Vladimir Kozhukalov, Elena Rogochaya

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