WELCOME!

HELMHOLTZ INTERNATIONAL SUMMER SCHOOL

Quantum Field Theory at the Limits: From Strong Fields to Heavy Quarks

Bogoliubov Laboratory of Theoretical Physics,
Joint Institute for Nuclear Research, 22 July – 2 August, 2019
Quantum Field Theory at the Limits: From Strong Fields to Heavy Quarks

Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, 22 July – 2 August, 2019
HISS Dubna
- Created in 2004
- 6 schools in 3 years
- Funding:
  Helmholtz President
  DESY + GSI
  JINR
- 15 Lecturers/ 50 Students
- 10 days + weekend

The First School: Hot points in Astrophysics (2004)

- 29 Stud. from Russia, Belarus, Armenia, Germany, Italy, Poland, Croatia, Japan
- 25 Students from JINR Dubna
- 13 Lecturers from Russia, Ukraine
- 12 lecturers from Germany, Italy, Poland, Korea, Japan, USA.
- Lecture notes printed at JINR Dubna Press
Startup Topics from the field “Structure of Matter” (2004 - 2006):

2. Heavy Quark Physics (2005) – Ali & Ivanov

Total lecturers: 147

Total Students: 315

Bogoliubov Laboratory of Theoretical Physics,
Joint Institute for Nuclear Research, 22 July – 2 August, 2019
JINR Mega-Science Project: NICA

http://theor.jinr.ru/twiki-cgi/view/NICA/WebHome

Bogoliubov Laboratory of Theoretical Physics,
Joint Institute for Nuclear Research, 22 July – 2 August, 2019
The Present and the Future of HISS Dubna

Cooperation Agreement between Helmholtz Centres and Institutes and JINR Dubna (2014 - 2016)

Cooperation Agreement
between
the Joint Institute for Nuclear Research (JINR) in Dubna, Russian Federation and
the Deutsches Elektronen-Synchrotron - DESY,
the Facility for Antiproton and Ion Research (FAIR) GmbH Darmstadt with
the FAIR-Russia Research Center (FRRC) in Moscow, Russian Federation,
the Forschungszentrum Jülich GmbH,
the GSI Helmholtz Center for Heavy Ion Research GmbH with
the Helmholtz Institute Jena and the Helmholtz Institute Mainz,
the Helmholtz-Zentrum Dresden - Rossendorf,
the Karlsruhe Institute for Technology
- HCs -
on the
Collaboration in the Planning and Conduction of the HISS Helmholtz
International Summer Schools in Dubna 2014 – 2016

Dated 04.11.2014
Helmholtz International Summer Schools (HISS) Dubna

“Structure of Matter under Extreme Conditions”

Scientific Program 2017 – 2019

Status: January 21, 2019

Title: Nuclear Theory and Astrophysical Applications
Organizers: S. Heinz (GSI Darmstadt), V. Voronov (JINR Dubna)
Website: http://theor.jinr.ru
Term: 10.-22.07. 2017

Title: Hadron Structure, Hadronic Matter and Lattice QCD
Organizers: O. Kaczmarek ( Uni Bielefeld), O. Teryaev (JINR Dubna), M. Ilgenfritz (JINR Dubna)
Website: http://theor.jinr.ru
Term: 20.08.-02.09. 2017

Title: Matter under Extreme Conditions in Heavy-Ion Collisions and Astrophysics
Organizers: M. Blaschke (FIAS Frankfurt, HIC for FAIR), D. Blaschke (JINR Dubna, Uni Wroclaw), L. Bravina (Uni Oslo), A. Tarasukho (NIINU Moscow)
Website: http://theor.jinr.ru/diasp/summer18/
Term: 20.-31.08. 2018

Title: Modern Colliders - Theory and Experiments
Organizers: D. Kazakov (JINR Dubna), J. Riemer (DESY Hamburg), S. Moch ( Uni Hamburg)
Website: https://indice.jinr.ru/conferenceDisplay.py?confId=418
Term: 22.07.-01.08. 2018

Title: Quantum Field Theory at the Limits: From Strong Fields to Heavy Quarks
Organizers: U. Meissner (FZ Jülich), H. Gies (HI Jena), M. Ivanov (JINR Dubna), D. Blaschke (JINR Dubna, Uni Wroclaw)
Website: http://theor.jinr.ru/meetings/2019/
Term: 22.07.-02.08. 2019

Title: Cosmology, Strings and New Physics
Organizers: B. Kampfer (HZ Dresden-Rossendorf), F.R. Klinkhamer (KIT Karlsruhe), I. Pirozhenko, A. Filippov (JINR Dubna), A. Starobinsky (Landau Inst. & JINR Dubna)
Website: http://indice.jinr.ru/conferenceDisplay.py?confId=736
Term: 04.-17.08. 2019

Cooperation Agreement
between
the Joint Institute for Nuclear Research (JINR) in Dubna, Russian Federation
and
the Deutsches Elektronen-Synchrotron - DESY,
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on the
Collaboration in the Planning and Conduct of the HISS Helmholtz International Summer Schools in Dubna 2014 – 2016

Dated 04.11.2014

Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, 22 July – 2 August, 2019
HELMHOLTZ INTERNATIONAL SUMMER SCHOOL
Dubna International Advanced School of Theoretical Physics / DIAS-TH

Bogoliubov Laboratory of Theoretical Physics,
Joint Institute for Nuclear Research, July 18 – 30, 2016
Statistics for Quantum Field Theory at the Limits 2016

Participants - 71

Lecturers - 32
Statistics for Quantum Field Theory at the Limits 2019

Participants - 69

Lecturers - 23
**Program (first week)**

<table>
<thead>
<tr>
<th>time</th>
<th>Mon, 22</th>
<th>Tue, 23</th>
<th>Wed, 24</th>
<th>Thu, 25</th>
<th>Fri, 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-11:00</td>
<td>Karbstein</td>
<td>Karbstein</td>
<td>Karbstein</td>
<td>Blaschke</td>
<td>Blaschke</td>
</tr>
<tr>
<td>11:00-11:30</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
</tr>
<tr>
<td>11:30-12:30</td>
<td>Schulze</td>
<td>Schulze</td>
<td>Schulze</td>
<td>Mironov</td>
<td>Mironov</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Colangelo</td>
<td>Hosaka</td>
<td>Mironov</td>
<td>Kohlfürst</td>
<td>Kohlfürst</td>
</tr>
<tr>
<td>13:30-15:00</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>Smolyansky</td>
<td>Galkin</td>
<td>Kotikov</td>
<td>Saleev</td>
<td>Melikhov</td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
</tr>
<tr>
<td>16:30-17:50</td>
<td>Get together</td>
<td>Excursion</td>
<td>Problem solving</td>
<td>Talk [1-4]</td>
<td>Seminar</td>
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### Program (Second Week)

<table>
<thead>
<tr>
<th>Time</th>
<th>Mon, 29</th>
<th>Tue, 30</th>
<th>Wed, 31</th>
<th>Thu, 01</th>
<th>Fri, 02</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-11:00</td>
<td>Grozin</td>
<td>Hanhart</td>
<td>Hanhart</td>
<td>Körner</td>
<td>Faustov</td>
</tr>
<tr>
<td>11:00-11:30</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
</tr>
<tr>
<td>11:30-12:30</td>
<td>Hanhart</td>
<td>Grozin</td>
<td>Grozin</td>
<td>Ivanov</td>
<td>Anikin</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Melikhov</td>
<td>Santorelli</td>
<td>Lyubovitskij</td>
<td>Tran</td>
<td>Closing</td>
</tr>
<tr>
<td>13:30-15:00</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
<td>lunch</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>Ahmadiniazi</td>
<td>Ahmadiniazi</td>
<td>Ahmadiniazi</td>
<td>Issadykov</td>
<td></td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td>break</td>
<td></td>
</tr>
<tr>
<td>16:30-17:50</td>
<td>Talk [5-8]</td>
<td>seminar</td>
<td>talk [9-12]</td>
<td>seminar</td>
<td></td>
</tr>
</tbody>
</table>
1 – Hotel “Dubna”
2 – House of International Meetings
5 – Hotel “Grill”
7 – Restaurant “Old Armenia”
8 – Visit Centre
9 – JINR Labs: BLTP, FLNR, LIT, FLNP, DLNP, LRB
10 – Railway station “Dubna”; Express train to Moscow
The School is opened -
The School is opened - Enjoy Your Summer School!