

**2<sup>nd</sup> International Conference on**  
**QUANTUM ELECTRODYNAMICS**  
**AND**  
**STATISTICAL PHYSICS**

**SECOND ANNOUNCEMENT**

## **General Information**

The 2<sup>nd</sup> International Conference "Quantum Electrodynamics and Statistical Physics" (QEDSP2006) will be held on **September 19-23, 2006** at the National Science Center "Kharkov Institute of Physics and Technology" (NCS KIPT), Kharkov, Ukraine.

## **Organizers of QEDSP2006**

The conference is organized by National Science Center "Kharkov Institute of Physics and Technology" and by Akhiezer Institute for Theoretical Physics of NSC KIPT in collaboration with Karazin Kharkov National University.

## **Presentations**

The QEDSP2006 Conference will have plenary (25+5 min), parallel oral (15+5 min), and poster sessions. The working language of the Conference is English.

## **Format of the Conference**

The Conference plenary talks start every morning at 9:00 and end about 13:30. After a lunch break talks resume at 14:30 and end around 18:00. The Conference ends on Saturday September 23 at 13:30.

## **Instructions for oral presentations**

There will be necessary facility for oral presentations (beamers and overhead projectors). Participants may use their own notebooks but they are recommended to use Conference service notebooks and to bring the presentations on commonly used carriers (CD, DVD, Flash-memory and 3" disks) made with the standard PC software (PowerPoint, Acrobat, GhostScript). Participants are asked to notify [Organizing Committee](#) if they are going to use less standard software in their presentations.

## Poster instructions

The Poster Sessions for QEDSP2006 will be held on Wednesday (Sept. 20) and Friday (Sept. 22) afternoons. The posters will be on display from 16:20 to 18:00. In order to take maximum advantage of the poster session presenters should prepare material that can be displayed on a board and readable from a distance of about one meter (3 ft). Poster boards are 140 cm wide and 70 cm high; push-pins to mount the posters will be provided. Presence of at least one of the co-authors of a poster is required during presentations. Presenters are responsible for removing materials from their display board after the session.

## Proceedings of the Conference

The Proceedings will be published after the Conferences in a special issue of a journal *Problems in Atomic Science and Technology, Ser. Nuclear Physics*, published by NSC KIPT. Details of submission and the relevant guidelines will be announced later.

## Book of Abstracts

Participants will receive the Book of Abstracts at the registration desk.

## Conference Preliminary Program

The QEDSP2006 Conference has already succeeded in attracting attention of a scientific community: 154 participants from 17 countries have been registered presenting 184 talks. Below are listed some plenary and oral presentations:

"Application of the Drell-Yan form of the cross section to colliders. Relativistic generalization of black disk optic theorem" **E.Kuraev** (*JINR, Russia*)

"Aspects of D-brane dynamics in supergravity backgrounds" **I.Bandos** (*NSC KIPT, Ukraine*) and **D.Sorokin** (*INFN, Italy*)

"BPS preons and M-theory" **J. de Azcárraga** (*Valencia University, Spain*)

"Candle burnup in a fast reactor core and relating nonlinear problems" **H.Sekimoto** (*Tokyo Institute of Technology, Japan*)

"Cluster formation in the system of gravitating Fermi and Bose particles" **B.Lev** and **K.Grigorishin** (*Institute of Physics, Ukraine*)

"Coherent processes at interaction of high-energy particles with crystals and external fields" **N.Shulga** (*NSC KIPT, Ukraine*)

"Femtosecond scanning, chopping and length measurement of electron bunches by laser pulses and principles of femtosecond oscilloscopes" **E.Gazazian**, **K.Ispirian**, **M.Ispirian** (*Yerevan Physics Institute, Armenia*), **D.Kalantaryan** (*CANDLE, Armenia*), and **D.Zakaryan** (*Yerevan State University, Armenia*)

"From theory to experiment: hadron electromagnetic form factors in space-like and time-like regions" **E.Tomasi-Gustafsson** (*CEA Saclay, France*), **G.Gakh**, and **A.Rekalo** (*NSC KIPT, Ukraine*)

"Fundamentals of Levy flights" **A.Chechkin**, **V.Gonchar** (*NSC KIPT, Ukraine*), **J.Klafter** (*Tel Aviv University, Israel*), and **R.Metzler** (*NORDITA-Nordisk Institute for Theoretical Physics, Denmark*)

"Galactic cosmic rays – clouds effect and bifurcation model of global climate of the earth" **V.Rusov** (*Odessa National Polytechnic University, Ukraine*) **et al.**

- "Graviton scattering on a Newtonian center as a restriction on possible 3-graviton vertices" **A.Nikishov** (*FIAN, Russia*)
- "Kinetic collective excitations in liquids: theory and computer simulations" **T.Bryk** and **I.Mryglod** (*Institute for Condensed Matter Physics, Ukraine*)
- "Magnetic monopole and CP violation at finite temperature" **Yu.Sitenko** (*Bogolyubov Institute for Theoretical Physics, Ukraine*), **A.Solovyov** (*Kiev National University, Ukraine*), and **N.Vlasii** (*Princeton University, USA*)
- "Mass zeros of the fermionic determinant in QED4" **M.Fry** (*University of Dublin, Ireland*)
- "N-spheres in general relativity: blackholes, wormholes and gravastars" **O.Zaslavskii** (*Kharkov National University, Ukraine*)
- "On (super)twistor string and its superspace(time) formulation" **I.Bandos**, **J. de Azcárraga**, and **C.Miquel-España** (*Valencia University, Spain*)
- "On the role of frustration on formation of the heterogeneous liquid phase" **A.Bakai** (*NSC KIPT, Ukraine*)
- "Exactly solvable model of the Lifshits phase transition" **V.Baryakhtar** (*Institute of Magnetism, Ukraine*), **E.Belokolos**, **A.Dmitriev**, **A.Samar** (*Kiev Polytechnical Inst., Ukraine*)
- "Phase transitions in moving systems: vortices in superconductors" **M.Gitterman** (*Bar-Ilan University, Israel*)
- "Polarization phenomena in a multiple Compton backscattering process" **A.Potylitsyn** (*Tomsk Polytechnic University, Russia*)
- "Quantum relaxation under the influence of non-Markovian stationary noises with infinite memory range: exact results" **I.Goychuk** and **P.Hänggi** (*University of Augsburg, Germany*)
- "Quantum theory of the Vavilov-Cherenkov radiation by particle with arbitrary spin" **G.Afanasiev** (*JINR, Russia*), **M.Lyubchenko** (*Kharkov National University, Ukraine*), and **Yu.Stepanovsky** (*NSC KIPT, Ukraine*)
- "Second quantization method in the presence of bound states of particles in non-relativistic quantum electrodynamics and statistical physics" **S.Peletminskii** and **Yu.Slyusarenko** (*NSC KIPT, Ukraine*)
- "Self-sustained regime of nuclear burning wave in fast reactor" **S.Fomin et al.** (*NSC KIPT, Ukraine*)
- "Solid phase isothermal nucleation in supercooled liquids" **V.Slezov** (*NSC KIPT, Ukraine*)
- "Spontaneous parity breaking in the theory of modulated structures" **A.Babich**, **S.Berezovskiy**, and **V.Klepikov** (*Institute of Electrophysics & Radiation Technologies, Ukraine*)
- "The dice and pulsars" **V.Kontorovich** (*Institute of Radio Astronomy, Ukraine*)
- "The geodesics of a ten-dimensional a Ricci-flat Riemannian spaces" **V.Dryuma** (*Institute of Mathematics and Informatics, Moldova*)
- "The high-Z hydrogen-like atom: A model for polarized structure functions" **X.Artru** (*Institut de Physique Nucléaire de Lyon, France*), **K.Benhizia** (*Université Mentouri, Algeria*)
- "The spontaneous generation of magnetic fields at high temperature in SU(2)-gluodynamics on a lattice" **V.Demchik** and **V.Skalozub** (*Dnepropetrovsk National University, Ukraine*)
- "The world of chaos" **Yu.Bolotin** (*NSC KIPT, Ukraine*), **V.Yanovsky** (*Institute for Single Crystals, Ukraine*)
- "To kinetics of boson systems with non-zero boson field" **A.Sokolovsky** (*Dnepropetrovsk National University, Ukraine*)
- "Vacuum condensates, dynamical masses, ether wind" **P.Fomin** (*Bogolyubov Institute for Theoretical Physics, Ukraine*)

## Tentative QEDSP2006 Schedule

	Monday, 18	Tuesday, 19	Wednesday, 20	Thursday, 21	Friday, 22	Saturday, 23
08:30 - 09:00		Registration				
09:00 - 10:00	Technical Tour (Kiev, Chernobyl)	Opening ceremony, Plenary Session	Plenary Session	Plenary Session	Plenary Session	Plenary Session
10:00 - 11:00			Coffee break	Coffee break	Coffee break	Coffee break
11:00 - 11:20		Coffee break	Plenary Session	Plenary Session	Plenary Session	Plenary Session and Closing ceremony
11:20 - 11:30						
11:30 - 12:00						
12:00 - 13:30		Lunch	Lunch	Lunch	Lunch	
13:30 - 14:30		Oral Parallel Sessions	Oral Parallel Sessions	Oral Parallel Sessions	Oral Parallel Sessions	
14:30 - 16:00		Registration	Coffee break	Coffee break	Excursion to city of Kharkov	Coffee break
16:00 - 16:20		Registration	Oral Parallel Sessions	Oral/Poster Parallel Sessions		Oral/Poster Parallel Sessions
16:20 - 18:00			Welcome Party and Visit to Kharkov	Lecture and film		Optional Poster Session
18:00 - 18:30	National University			Conference Dinner & Concert		
18:30 - 19:30						
19:30 - 20:00						
20:00 - 21:00						

## List of Sections

- A. Quantum field theory
- B. Elementary particle theory
- C. High-energy electrodynamics in matter
- D. QED processes in strong fields
- E. Nonlinear dynamics
- F. Kinetic theory
- G. Phase transitions in condensed matter
- H. Physics of quantum liquids

## Registration and Conference Fee

The conference registration fee will be 300 Euro and must be paid in cash at the registration desk. It includes costs for local transportation, tea/coffee, lunches, welcome party, and a copy of the Conference Proceedings.

## Accommodation

The [Organizing Committee](#) proposes to the conference participants hotel accommodations in the city hotels “Kievskaya” and “Kharkov” (in the city center, 10 km from the conference site) with transport to get to the conference site and back to the hotels, as well as in a rest center “Solnechny” near the conference site (about 1 km). The Organizing Committee plans to provide the morning bus for those who stay in “Solnechny” to get to the conference.

Each participant who prefers to stay in the hotels “Kievskaya” and “Kharkov” has to reserve his accommodation directly with the hotels by fax or e-mail. Please, notify [Organizing Committee](#) about your reservation in order to provide transport, as well as in the case of any problem with the reservation.

**Hotel “KIEVSKAYA”**

4, Kultury St., Kharkov 61022, Ukraine

Tel.: +38 (057) 714-3101, 700-3882

Fax: +38 (057) 714-3100

E-mail: [info@hotel-kyivskiy.com](mailto:info@hotel-kyivskiy.com),Web page: <http://www.hotel-kyivskiy.com/index.html>

Type of apartment	Price for reservation (\$ US)*	Price per night (\$ US)**
Suite (3 rooms) “Super Luxe”	24	202
Double suite (2 rooms) “Luxe”	24	130
Single room “Luxe”	24	77
Single room	12	65
Single room (standard)	12	48
Double room (standard)	12	72

\* should be paid upon arrival

\*\* breakfast included

**Hotel “KHARKOV”**

Svobody square 7, Kharkov, 61022, Ukraine

Tel: +38(057) 7580-008, +38(057)7580-153,

Fax: +38(057) 705-19-63

E-mail: [hotel@ukrsat.kharkov.ua](mailto:hotel@ukrsat.kharkov.ua)Web page: [http://www.hotel.kharkov.com/index\\_en.html](http://www.hotel.kharkov.com/index_en.html)

Type of apartment	Price \$US	
	One room	Two rooms
* Single	50	—
* Standard	50	—
** Superior room	92	108
** Deluxe - one room	130	160
** Deluxe - one room	200	240
** Deluxe - Two rooms	160	200
Deluxe "Merlin"	240	280
Deluxe "Studio"	240	280
Deluxe "Kharkov"	440	480

- Price is indicated in USD, including VAT and breakfast

- \* Cafe "Seventh Sky"

- \*\* Restaurant "Continent" - "Buffet Breakfast"

- Children under 12 stay with parent room

- Transfer: airport - hotel, minivan = \$ 45, car Fiat (with driver) = \$ 45

- railway station - hotel, minivan = \$ 22, car Fiat (with driver) = \$ 22

- Rates are subject to change without notice

For those who prefer the rest center “Solnechny” (the cost is €20 per night, per person in double room, breakfast included) we recommend that you make your reservation via [Organizing Committee](#) as soon as possible, since a number of rooms here is limited. In the days of the conference a morning bus for attendees will be provided.

Participants who wish to book one of these rooms must be already registered in the Conference and send their request to [Organizing Committee](#) . Rooms will be allocated on a first-come-first-served basis up to the availability limit.

More information on accommodation in Kharkov can be found in:

<http://www.kharkov.ua/about/hotels.phtml>,

<http://www.national.kharkiv.com/>; <http://www.hotel-mir.com.ua/>

We remind that the [climate](#) in Kharkov is temperate continental with the beautiful autumn that is as a rule warm and dry with a lot of sunny days.

## Travel and Transportation

From abroad you may fly to Kiev ([Borispol airport](#)) or to Kharkov (the only flight to Kharkov from abroad is by [Austrian Airlines](#) via Vienna). There are two flights daily from Kiev to Kharkov.

### Domestic Driving Directions

If you fly to Kharkov airport you can either get a taxi or a bus #119 to the hotels "Kharkov", (about 30 minutes drive by a taxi). You can get the ticket by the bus driver (1 Hryvna or equiv. \$0.2). The hotel "Kievskaya" is at one bus or tram stop distance (700 m) from hotel "Kharkov". A [schematic map](#) will be posted at the conference site.

If you arrive in Kharkov by train you should use the taxi or underground from “Pivdennyi Vokzal” station to “Sovetskaya” station, change the line and go to the station “Universitet” (hotels "Kharkov" and "Kievskaya").

The conference will be held in the [National Science Center "Kharkov Institute of Physics and Technology"](#) (NSC KIPT) in the settlement Pyatikhatki at the outskirts of Kharkov. An inexpensive and most convenient choice to get to Pyatikhatki is to take a bus #296 from the center of the city (underground station “Sovetskaya”) or a minibus #256 from hotels "Kharkov" and "Kievskaya" and go to the stop "Institute". You can buy the ticket directly with the bus driver (1 Hryvna=\$0.2). A taxi cost is about \$5.

The rest center “Solnechny” is located in Pyatikhatki at 1 km distance from the National Science Center KIPT. A [schematic map](#) will be posted at the conference site.

## Technical Tour

One of the optional activities available to attendees at QEDSP2006 will be a technical tour to Chernobyl. Chernobyl is the city of the Chernobyl nuclear power plant, where the Chernobyl disaster occurred at 01:23 a.m. on April 26, 1986. It is regarded as the worst accident in the history of nuclear power.

Now intensive international technical and scientific work continues here with the aim to minimize and eliminate the accident consequences.

More information is available at:

<http://www.chernobyl.info/> ,

[http://en.wikipedia.org/wiki/Chernobyl\\_accident](http://en.wikipedia.org/wiki/Chernobyl_accident)



A technical tour, to be led by one of the Chernobyl personnel, will be presumably arranged under the auspices of the [Ministry of Emergencies & Chernobyl Catastrophe](#) and begin in Kiev at 9 am on Monday September 18. Those interested in the visit must arrive in Kiev independently and be present there Monday morning. We will be chartering a bus, which will leave the Kiev railway station in the morning and return back to the station later in the afternoon Sept. 18. Then you may take the night train from Kiev to Kharkov. You may also come to Kharkov in the night with the same chartered bus. There is no charge for the bus, but the tour itself nominally costs \$100. Tour registration is limited, so please indicate your interest in the tour by e-mailing [Organizing Committee](#) (till August 25 and as soon as possible). More information will follow.

## Social Programme

### Tuesday 19: Welcome Party and Visit to the [Kharkov National University](#)



Karazin Kharkov National University is one of the oldest universities in Eastern Europe. It was founded in November 1804, on the initiative of the prominent educator V.N. Karazin and in accordance with the charter of Tsar Alexander I.

The University gave a powerful impetus to the emergence of Kharkov as a major scientific and cultural center and an academic hub of Ukraine. Today the University justly rates among the best Ukrainian classical universities and is known in many countries.

Kharkov University is the only university in Ukraine that has trained and employed three Nobel Prize laureates: the biologist I. Mechnikov, the economist S. Kuznets, and the physicist L. Landau.

More information is available at:  
<http://www.univer.kharkov.ua/>

**Wednesday 20 - A lecture about Laboratory #1 — a secret designation of the [NSC KIPT](#) at the time of atomic problem (guest lecturer Prof. Yu. Ranyuk) and film about Alexander I. Akhiezer, founder of the [Akhiezer Institute for Theoretical Physics](#).**

### Thursday 21 - Excursion in city of Kharkov and Visit to the Kharkov Art Museum

Kharkov (Ukrainian Kharkiv) is a city and administrative centre in the northeastern of Ukraine. It was founded about 1655 as a military stronghold to protect Russia's southern borderlands.

Today Kharkov is the second largest city in Ukraine. Its industrial structure is headed by engineering.

The city is one of the most important cultural and educational centers of Ukraine. Its university was founded at the early beginning of the 19-th century. There are numerous other scientific-research and higher education institutions.

Kharkov has a philharmonic hall, several theatres, a planetarium, and a number of museums. Pop. (est.) 1,500,000.

More information is available at the site of [Kharkov Regional Administration](#) and at <http://www.kharkov.ua/index-e.phtml>



### Thursday 21 - Conference Dinner and a Concert

The Conference Dinner (€20 per person) will take place at the rest center “Solnechny”.