

**SIXTEENTH LOMONOSOV CONFERENCE ON
ELEMENTARY PARTICLE PHYSICS**

**TENTH INTERNATIONAL MEETING ON
PROBLEMS OF INTELLIGENTSIA:
"The Intelligentsia and Ideology"**

Moscow State University, Moscow, 22 – 28 August, 2013

**Under the Patronage of the Rector
of the Moscow State University
Victor Sadovnichy**

**Dedicated to the 80th Anniversary of
Faculty of Physics
of Moscow State University**

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PROJECT

Programme of the 16th Lomonosov Conference on Elementary Particle Physics
/duration of 25 (20/15) min talks includes 5 (3) minutes for discussion/

22 August, Thursday

08.00 – 09.00 **Registration** (Auditorium 1-31, Faculty of Physics,
Moscow State University)

09.00 – 09.15 **Opening** (Conference Hall)

A.Studenikin, Chairman of Organizing Committee (MSU & JINR),

On behalf of MSU

On behalf of Faculty of Physics, MSU

A.Slavnov, Head of Department of Theoretical Physics, Faculty of Physics of MSU

V.Matveev, Director of Joint Institute for Nuclear Research (JINR, Dubna)

09.15 – 13.30 **MORNING SESSION** (Conference Hall)

Chairman:

09.15 *Dedication to the centenary of Bruno Pontecorvo* (10 min)

09.25 Z. Xing (Chinese Academy of Sciences) *From Lepton Flavor Mixing to Neutrino-Antineutrino Oscillations* (25 min)

09.50 M. Pallavicini (Univ. & INFN, Genova) *Neutrinos from the Sun and from the Earth: what we understood in the last ten years* (25 min)

10.15 A. Bettini (Canfranc Underground Lab.) *Are neutrinos completely neutral particles?* (25 min)

10.40 M. Goodman (Argonne) *Neutrino Physics in 2020* (25 min)

11.05 – 11.30 Tea break

Chairman:

11.30 S.-B. Kim (Seoul National Univ.) *Review on measurements of θ_{13}* (25 min)

11.55 Y. Suzuki (Kamioka Observatory, ICRR, Tokyo Univ.) *Super-Kamiokande Experiment* (25 min)

12.20 M. Malek (Imperial College London) *Recent Results from T2K* (25 min)

12.45 T. Lasserre (CEA, Saclay) *The reactor anomaly and its testing with high intensity neutrino generators* (25 min)

13.10 L. Bezrukov (INR RAS) *GERDA experiment - results and status* (20 min)

13.30 – 15.00 Lunch

15.00 – 19.25 **AFTERNOON SESSION** (Conference Hall)

Chairman:

15.00 R. St. Denis (Glasgow Univ.) *Higgs at ATLAS* (25 min)

15.25 S. Choudhury (DESY, Hamburg) *Higgs Boson at the CMS experiment* (25 min)

15.50 A. Slavnov (Steklov Math. Inst. & MSU) *Quantization of non-abelian gauge fields beyond perturbation theory* (25 min)

16.15 – 16.45 Tea break

Chairman:

16.45 S. Wojcicki (Stanford Univ.) *Results from MINOS* (25 min)

17.10 A. Rubbia (ETH, Zurich) *LAGUNA/LBNO project* (25 min)

17.35 A. Ereditato (Bern Univ.) *Liquid argon TPCs for future neutrino oscillation experiments* (25 min)

18.00 J. Urheim (Indiana Univ.) *Status and Outlook for LBNE* (25 min)

18.25 The movie dedicated to Bruno Pontecorvo

19.30 – 23.30 SPECIAL SESSION (40⁰)

Reception banquet will be held on board of a ship that will stream along the river across the central part of Moscow; the conference buses to the ship will depart from the entrance of the Faculty of Physics at **19.30**

23 August, Friday

09.00 – 13.30 MORNING SESSION (Conference Hall)

Chairman:

09.00 S. Kabana (SUBATECH and Nantes Univ.) *Highlights from the STAR experiment at the Relativistic Heavy Ion Collider (RHIC)* (20 min)

09.20 I. Meshkov (JINR) *NICA project at JINR* (25 min)

09.45 T. Nilsson (Chalmers Univ. of Techn.) *The FAIR facility* (25 min)

10.10 D. Lhuillier (CEA, Saclay) *Reactor neutrinos: status of predicted spectra and review of sterile neutrino searches at very short baselines* (25 min)

10.35 I. Machulin (Kurchatov Inst.) *SOX project: Short Distance Neutrino Oscillations with Borexino* (20 min)

10.55 – 11.20 Tea break

Chairman:

11.20 N. Kitagawa (Nagoya Univ.) *The OPERA experiment, analysis status and recent results on muon-neutrino to electron-neutrino oscillations* (20 min)

11.40 S. Dmitrievsky (JINR) *Status and updated results of the OPERA experiment search for muon-neutrino to tau-neutrino oscillations* (20 min)

12.00 F. Varanini (INFN, Padova) *ICARUS Status Report* (20 min)

12.20 V. Kravtsov (South. Methodist Univ.) *Neutrino oscillation physics at the NOvA experiment* (20 min)

12.40 S. Grullon (Pennsylvania Univ.) *Status of the SNO+ Experiment* (25 min)

13.05 S. Turck-Chieze (CEA, Saclay) *Solar neutrinos and helioseismology* (25 min)

13.30 – 15.00 Lunch

15.00 – 18.50 AFTERNOON SESSION (Conference Hall)

Chairman:

15.00 A. Dolgov (INFN, Ferrara) *Light millicharged particles and large scale cosmic magnetic fields* (20 min)

15.20 D. Medvedev (JINR) *Upper bound on neutrino magnetic moment* (20 min)

15.40 V. Sinev (INR RAS) *News from the Double Chooz experiment* (20 min)

16.00 A. Barabash (ITEP) *Review of double beta decay experiments* (25 min)

16.25 F. Piquemal (CNRS, LSM) *NEMO3 results and Status of SuperNEMO* (25 min)

16.50 L. Bornschein (Karlsruhe Inst. of Techn.) *Status of KATRIN* (20 min)

17.10 – 17.35 Tea break

Chairman:

17.35 R. Cerulli (INFN-LNGS) *Recent results on the searches for double beta decay processes with scintillators and pure samples* (20 min)

17.55 J. Shirai (Tohoku Univ.) *The status of KamLAND-Zen for neutrinoless double beta decay of ^{136}Xe* (20 min)

18.15 V. Belov (ITEP, MEPhI) *Recent results from EXO-200* (15 min)

18.30 V. Duk (INFN, Perugia) *Recent results from NA62* (20 min)

19.00 – 22.30 Sight-seeing bus excursion in Moscow

24 August, Saturday

09.00 – 13.35 MORNING SESSION (Conference Hall)

Chairman:

09.00 D. Veberic (Nova Gorica Univ.) *Highlights from the Pierre Auger Observatory* (20 min)

09.20 V. Berezhinsky (GSSI/LNGS, INFN) *Status of ankle in UHECR* (25 min)

09.45 I. Moskalenko (Stanford Univ.) *Fermi at Five - Some highlights from Fermi Large Area Telescope* (20 min)

10.05 J. Lavalle (Montpellier Univ.) *GeV-TeV galactic cosmic rays* (25 min)

10.30 G. Vasileiadis (Montpellier II Univ.) *Status of the H.E.S.S. telescope* (20 min)

10.50 A. Morselli (INFN of Roma Tor Vergata) *Search for dark matter in the Sky with ongoing and planned experiment* (25 min)

11.15 – 11.40 Tea break

Chairman:

11.40 R. Sparvoli (INFN & Univ. of Rome-2) *Recent Results From the space experiment PAMELA* (25 min)

12.05 R. Battiston (Trento Univ.) *Recent results from the AMS experiment on the International Space Station* (25 min)

12.30 R. Bernabei (INFN & Univ. of Rome-2) *New results from DAMA/LIBRA* (25 min)

12.55 F. Reindl (MPI, Munich) *Status Update on the CRESST Dark Matter Search* (20 min)

13.15 A. Kish (Zurich Univ.) *Dark Matter Searches with the XENON Experiment* (20 min)

13.35 – 15.00 Lunch

15.00 – 18.30 AFTERNOON SESSION (Conference Hall)

Chairman:

15.00 N. Fornengo (Univ. & INFN, Torino) *Multiwavelength and multimessenger signals of dark matter* (25 min)

15.25 F. Frasconi (INFN, Pisa) *Advanced VIRGO interferometer: a second generation detector for Gravitational Waves observation* (20 min)

15.45 M. Branchesi (Urbino Univ. & INFN, Florence) *Electromagnetic counterparts of gravitational wave transients* (25 min)

16.10 J. Harms (INFN, Florence) *Innovative Technologies for the Gravitational-Wave Detectors LIGO and Virgo* (25 min)

16.35 – 17.05 Tea break

Chairman:

17.05 W. Rau (Queen's Univ. Kingston) *Search for Dark Matter WIMPs* (25 min)

17.30 H. Wong (Academia Sinica) *Low Energy Neutrino and Dark Matter Physics with sub-keV Germanium Detectors* (20 min)

17.50 G. Fiorillo (Univ. Federico II & INFN, Naples) *The DarkSide Program* (20 min)

18.10 S. Demidov (INR RAS) *Dark Matter searches at Baksan Underground Scintillator Telescope* (20 min)

25 August, Sunday

9.00 – 19.00

Bus excursion to Sergiev Posad

26 August, Monday

09.00 – 13.35 MORNING SESSION (Conference Hall)

Chairman:

09.00 A. Zakharov (ITEP) *The Galactic Center as a laboratory for alternative theories of gravity and new physics* (20 min)

09.20 P. Di Bari (Southampton Univ.) *Leptogenesis and low energy neutrino data* (25 min)

09.45 T. Weiler (Vanderbilt Univ.) *Broken ν_μ - ν_τ Symmetry and Cosmic Neutrino Flavor Ratios* (20 min)

10.05 S. Pakvasa (Hawaii Univ.) *Depletion of high energy astrophysics muon-neutrinos* (20 min)

10.25 J.-P. Chieze (CEA, Saclay) *A new mechanism for the deflagration to detonation transition in Type Ia supernovae* (15 min)

10.40 S. Mandal (Asia Pacific Center For Theor. Phys.) *Correlation of Linear Quasar Polarization: ALPs Revisited* (20 min)

11.00 – 11.25 Tea break

Chairman:

11.25 M. Yokoyama (Tokyo Univ.) *Hyper-Kamiokande project* (25 min)

11.50 Zh. A.-M. Dzhilkibaev (INR RAS) *Status of the BAIKAL-GVD Project* (20 min)

12.10 J. Brunner (CPPM, Marseille) *Neutrino Telescopes as targets for LBL Neutrino Beams* (25 min)

12.35 I. Lyashko (INR RAS) *The measurements of the yield of neutrons generated by horizontal muons in the LVD detector* (15 min)

12.50 N. Mankoc Borstnik (Ljubljana Univ.) *Do we have the explanation for the families and their properties, for the scalar Higgs and Yukawa couplings and for the gauge vector fields?* (25 min)

13.15 A. Damanik (Sanata Dharma Univ.) *μ - τ Symmetry, nonzero θ_{13} , and CP violation* (20 min)

13.35 – 15.00 Lunch

15.00 – 18.35 AFTERNOON SESSION (Conference Hall)

Chairman:

15.00 L. Piilonen (Virginia Tech.) *Recent results from Belle* (25 min)

15.25 A. Kupsc (Uppsala Univ.) *The KLOE-2 talk* (20 min)

15.45 P. Lukin (Budker Inst. of Nucl. Phys., Novosibirsk) *Recent Results from CMD-3 detector* (20 min)

16.05 V. Golubev (Budker Inst. of Nucl. Phys., Novosibirsk) *Recent BaBar results on rare B decays, CP- and T-violation* (20 min)

16.25 K. Lipka (DESY) *HERA measurements of proton structure and implication for the LHC (for H1 and ZEUS collaborations)* (20 min)

16.45 – 17.10 Tea break

Chairman:

17.10 R. Shrock (Stony Brook Univ.) *Higher-Loop Calculations of UV to IR Evolution of Gauge Theories and Remarks on Neutrino Properties* (25 min)

17.35 V. Belokurov (MSU) *Quantum restoration of broken symmetries* (20 min)

17.55 A. Shabad (Lebedev Phys. Inst.) *Nonlinear corrections to basic problems of electro- and magneto-statics with and without external field* (20 min)

18.15 V. Dvoeglazov (Univ. de Zacatecas) *Notoph-Graviton-Photon Coupling* (20 min)

Parallel Session 1

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16.45 – 18.30

Chairman: **Oleg Kharlanov** (MSU)

16.45 K. Stepanyantz (MSU) *The renormalization scheme producing the NSVZ beta-function for $N=1$ SQED regularized by higher derivatives* (15 min)

17.00 A. Nesterenko (JINR) *Hadronic vacuum polarization function in the framework of dispersive approach to QCD* (15 min)

17.15 A. Aparin (JINR) *Self-similarity of High- p_T Cumulative Hadron Production in pA Collisions* (15 min)

17.30 K. Astapov (INR RAS) *Impact of sgoldstino on Higgs sector physics* (15 min)

17.45 O. Kharlanov (MSU) *Peculiar seasoning in the neutrino day-night asymmetry: where and when to look for spices?* (15 min)

18.00 P. Sizin (MSMU) *Plasmon decay to a neutrino pair via neutrino electromagnetic moments in a strongly magnetized medium* (15 min)

18.15 K. Zhukovsky (MSU) *Planar Undulator Performance and Harmonic Generation in a Constant Magnetic Field* (15 min)

Parallel Session 2

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16.45 – 18.30

Chairman: **Alexey Lokhov** (INR RAS)

16.45 D. Galtsov (MSU) *Inflation without scalar fields* (20 min)

17.05 V. Dokuchaev (INR RAS) *Spin of the supermassive black hole in the Galactic center* (15 min)

17.20 E. Arbuzova (Dubna Univ. & NSU) *Modified gravity and gravitational repulsion* (15 min)

17.35 A. Burinskii (NSI RAS) *Complexification as alternative to higher dimensions:
 $N = 2$ string as a complex source of Kerr geometry* (20 min)

17.55 M. Fil'chenkov (People's Friendship Univ. of Russia) *Particle Accretion onto Miniholes* (15 min)

18.10 A. Singh (LNMIIT) *A Field Theory perspective on Dark Energy and the spherically symmetric gravitational collapse of Dark Energy Field Configurations* (20 min)

27 August, Tuesday

09.00 – 13.30 MORNING SESSION (Conference Hall)

Chairman:

09.00 M. Saleem (Oklahoma Univ.) *Overview of ATLAS results* (25 min)

09.25 R. Rahmat (Mississippi Univ.) *CMS Overview* (25 min)

09.50 L. Benucci (Ghent Univ.) *Top quark physics at the CMS* (20 min)

10.10 Th. Neep (Manchester Univ.) *Top physics with ATLAS* (20 min)

10.30 J. Price (Liverpool Univ.) *Higgs physics with ATLAS* (20 min)

10.50 A. Mohammadi (Libre de Bruxelles Univ.) *Search for the Standard Model Higgs boson decaying to a pair of taus at CMS* (20 min)

11.10 – 11.40 Tea break

Chairman:

11.40 I. Gorbunov (JINR) *Measurement of the Drell-Yan differential cross-section and forward-backward asymmetry in pp collisions at 7 TeV with the CMS detector* (20 min)

12.00 I. Chalupkova (Charles Univ., Prague) *Heavy Flavour physics with ATLAS* (20 min)

12.20 L. Pernie (Libre de Bruxelles Univ.) *ZZ cross section measurements and limits on anomalous coupling constants for neutral triple gauge boson* (20 min)

12.40 A. Tykhonov (Jozef Stefan Inst.) *Exotics searches with ATLAS* (15 min)

12.55 M. Hamer (Goettingen Georg-August-Univ.) *SUSY searches with ATLAS* (15 min)

13.10 T. Reis (Libre de Bruxelles Univ.) *Searches for new massive resonances decaying to leptons at CMS* (20 min)

13.30 – 15.00 Lunch

15.00 – 18.50 AFTERNOON SESSION (Conference Hall)

Chairman:

15.00 L. Lambourne (Univ. College, London) *Standard model physics with ATLAS* (20 min)

15.20 B. Guerzoni (INFN, Bologna) *Recent results from ALICE* (25 min)

15.45 S. Kiselev (ITEP) *Hadronic resonance production with the ALICE experiment in pp and Pb-Pb collisions at LHC energies* (15 min)

16.00 A. Bizzeti (Modena Univ. & INFN Sezione di Firenze) *Kaon decays at NA48* (20 min)

16.20 P. Krizan (Ljubljana Univ.) *The Belle II experiment* (25 min)

16.45 – 17.10 Tea break

Chairman:

17.10 A. Haesler (Geneva Univ.) *Hadro-Production measurements in NA61/SHINE for the precise T2K neutrino flux prediction* (15 min)

17.35 T. Czopowicz (Warsaw Univ. of Techn.) *Results from NA61 ion program* (15 min)

17.40 O. Steinkamp (Phys. Inst., Zurich Univ.) *CP violation and rare decays at LHCb* (25 min)

18.05 A. Popov (IHEP) *Rare decays at LHCb* (15 min)

18.20 I. Polyakov (ITEP) *B decays to charmonia at LHCb* (15 min)

18.35 A. Artamonov (IHEP) *Quarkonia production at LHCb* (15 min)

28 August, Wednesday

09.00 – 13.20 MORNING SESSION (Conference Hall)

Chairman:

09.00 Y. Oksuzian (Virginia Univ.) *Latest results from Tevatron* (25 min)

09.25 M. Tokarev (JINR) *Self-similarity of Jet and Top-quark Production at Tevatron and LHC* (15 min)

09.40 V. Mokeev (Jefferson Lab & SINP MSU) *Excited nucleon state structure from the studies of exclusive meson electroproduction with the CLAS detector at Jefferson Lab* (20 min)

10.00 M. Greco (Univ. of Rome-3) *On the frozen QCD coupling* (20 min)

10.20 A. Papa (Paul Scherrer Inst.) *The existence of the $\mu^+ \rightarrow e + \gamma$ decay from Pontecorvo to date: new constraint by the MEG experiment* (25 min)

10.45 S. Karshenboim (MPQ & Pulkovo Observ.) *Recent progress in determination of the fundamental constants* (25 min)

11.10 – 11.40 Tea break

Chairman:

11.40 N. Saito (KEK) *Fundamental Physics at J-PARC* (25 min)

12.05 U. Schneekloth (DESY) *Two-Photon Exchange in Electron Proton Scattering - Status of the OLYMPUS Experiment at DESY* (25 min)

12.30 S. Ivanov (IHEP) *Accelerator Complex U-70 of IHEP-Protvino: Status and Prospects for Upgrade* (25 min)

12.55 M. Nozaki (KEK) *The International Linear Collider -From Design to Reality* (25 min)

13.20 – 15.00 Lunch

ROUND TABLE DISCUSSION

"Exciting neutrino:

from Pauli, Fermi and Pontecorvo to nowadays prospects"

(Conference Hall)

Chairman:

15.00 E. Akhmedov (Max Planck Inst. for Nucl. Phys., Heidelberg) *Neutrino oscillations and oscillation coherence* (25 min)

15.25 V. Gavrin (INR, SAGE coll.) *TBA* (25 min)

15.50 R. Nichol (UCL) *Radio detection of high energy neutrinos and cosmic rays* (20 min)

16.10 P. Spillantini (INFN, Florence) *Cosmogenic neutrinos detection* (20 min)

16.30 – 17.00 Tea break

17.00 S. Zavatarelli (INFN, Genoa) *Geo-neutrinos* (25 min)

17.25 A. Starobinsky (Landau Inst. for Theor. Phys. RAS) *Sterile neutrinos, cosmology and modified gravity* (25 min)

17.50 C. Spiering (DESY, Zeuthen) *High Energy Neutrino Astrophysics: Latest Results and Future Prospects* (25 min)

18.15 C. Giunti (INFN, Turin) *Neutrino Masses and Mixing* (25 min)

Discussion

**TENTH INTERNATIONAL MEETING ON
PROBLEMS OF INTELLIGENTSIA:
"The Intelligentsia and Ideology"
(Conference Hall)**

Chairman: Alexander Studenikin

19.00 J. Bleimaier (Princeton) *The Intelligentsia and Ideology* (25 min)

**Closing of the 16th Lomonosov Conference on Elementary Particle Physics
and the 10th International Meeting on Problems of Intelligentsia**

SPECIAL SESSION (40⁰)

POSTER SESSION

- V. Bagrov, V. Bordovitsyn, E. Nemchenko** (Tomsk State Univ.) *Torque Radiation Profiles from Pulsars*
- M. Chavleishvili** (Dubna Univ. & JINR) *Puzzle of high energy pp-scattering. Helicity conservation from perturbative qcd or kinematic hierarchy?*
- V. Dokuchaev, Yu. Eroshenko** (INR RAS) *Stationary quantum states of the Dirac fermions in the Reissner-Nordstrom metrics*
- Yu. Dumin** (MSU) *Instability of the close Keplerian orbits caused by the Dark Energy*
- D. Ejlli** (INFN, Ferrara & APC, Paris) *Particle production at the post recombination epoch*
- V. Khandramai** (Gomel State Techn. Univ.) *QCD Calculations with "FAPT" Package*
- R. Nevzorov** (ITEP) *Phenomenology of the NMSSM Higgs Bosons in the Low Fine-Tuning Region*
- A. Patrushev** (JINR) *The running coupling from the effective action of gauge theories in the presence of a strong background field*
- A. Polyarush** (INR RAS) *The inclusive production of the meson resonances in neutrino-nucleus charged current (CC) interactions*
- M. Re Fiorentin** (Southampton Univ.) *The N_2 -dominated scenario in leptogenesis*