XVth International Workshop
on High Energy Physics and Quantum Field Theory

Tver, Russia, 14 - 20 September 2000

Organizers: Institute of Nuclear Physics, Moscow State University
Tver State University
Joint Institute for Nuclear Research

Sponsors: Russian Ministry of Industry, Science and Technologies
Russian Foundation for Basic Research
Tver Region Administration
Deutsches Elektronen-Synchrotron
International Center of Fundamental Physics in Moscow
Moscow State University Educational and Scientific Center
Heisenberg-Landau Programme (JINR)

SCIENTIFIC

PROGRAM

TIME TABLE:

PLENARY SESSION

9.30 - 10.10 Talk 1

10.10 - 10.50 Talk 2

10.50 - 11.30 Talk 3

11.30 - 12.00 *Coffee break*

12.00 - 12.40 Talks 4

12.40 - 13.20 Talks 5

PARALLEL SESSIONS A, B

15.00 - 16.40 Parallel Sessions A, B

16.40 - 17.00 *Coffee break*

17.00 - 18.40 Parallel Sessions A, B

September 14

PLENARY SESSION

Chairperson Victor Savrin

9.00 **Opening**
9.30 **Sally Seidel** (CDF, Fermilab and University of New Mexico)
Recent results from CDF.
10.10 **Ann Heinson** (D0, Fermilab and University of California)
Single top quark production at the Tevatron.
10.50 **Andreas Nygren** (DELPHI, CERN)
Photon structure function measurements.
11.30 **Coffee break**

Chairperson John Ellison

12.00 **Alexander Proskuryakov** (HERA, DESY and INP MSU, Moscow)
Diffraction at HERA.

September 14

PARALLEL SESSION A

Chairperson Alexander Pukhov

15.00 **Kiyoshi Kato** (Kogakuin University, Tokyo)
Implementation of non-linear gauge in GRACE.
15.20 **Jumpei Fujimoto** (KEK, Tsukuba)
Status of GRACE/SUSY/1-Loop.
15.40 **Andrei Semenov** (Joint Institute for Nuclear Research, Dubna)
SUSY in CompHEP: latest development.
16.00 **Anna Skachkova** (Institute of Nuclear Physics, MSU, Moscow)
W+jets production at LHC: VECBOS and PYTHIA at very high P_T cuts.
16.10 **Polina Cherzor** (Institute of Nuclear Physics, MSU, Moscow)
Helicity amplitudes method for evaluation Feynman diagramms.
16.25 **Victor Andreev** (Gomel State University, Gomel)
Method of basic spinors for calculating Feynman amplitudes.
16.40 Coffee break

Chairperson Yuri Pirogov

17.00 **Mikhail Dubinin** (Institute of Nuclear Physics, MSU, Moscow)
Anomalous Wtb coupling in $t\bar{t}$ production at linear colliders.
17.20 **Alexander Belyaev** (Institute of Nuclear Physics, MSU, Moscow)
Single top quark tW+X production at the LHC.
17.40 **Dmitry Gorbunov** (Institute of Nuclear Research, Moscow)
Stoponium: potential of TESLA project.

September 14

PARALLEL SESSION B

Chairperson Dmitry Slavnov

15.00 **Yuri Kubyshin** (Institute of Nuclear Physics, MSU, Moscow)
Gauge invariant regularization in the ERG approach.
15.20 **Oleg Shro** (Samara State University, Samara)
The Isgur-Wise function in the relativistic Hamiltonian dynamics.
15.40 **Sergei Talalov** (Pedagogical University of Togliatti, Togliatti)
The dynamical system with non-linear Regge trajectories:
the models of exotic particles.
16.00 **Aleksey Alekseev** (Institute of High Energy Physics, Protvino)
On the dependence of nonperturbative contributions in $\bar{\alpha}_s(q^2)$ on an initial
approximation of perturbation theory in analytic approach to QCD.
16.20 **Jan Budczies** (University of Koeln, Koeln)
Color-flavor-transformation for the special unitary group and
application to low energy QCD.
16.40 **Coffee break**

Chairperson Yuri Kubyshin

17.00 **Fyodor Tkachov** (Institute for Nuclear Research, Moscow)
Factorization at large s. What the BFKL theory is (not) good for.
17.20 **Oleg Pavlovsky** (Moscow State University, Moscow)
QCD and finite-energy objects: effective field theory approach.

September 15

PLENARY SESSION

Chairperson Marina Cobal-Grassmann

9.30 **Armand Zylberstejn** (D0, Fermilab and DAPNIA/SPP, Saclay)
Physics results highligths from D0 Run I.
10.10 **Valentin Kuznetsov** (D0, Fermilab and University of California)
Higgs and B physics in run II.
10.50 **Tadeusz Lesiak** (DELPHI, CERN and INP, Krakow)
Two fermion production at LEP2.
11.30 **Coffee break**

Chairperson Sally Seidel

12.00 **Marina Cobal-Grassmann** (ATLAS, CERN, Geneve)
ATLAS: detector status and physics potential.
12.40 **Andrey Golutvin**, (LHCb, CERN and ITEP, Moscow)
Current status of B-physics and future prospects with LHCb.

September 15

PARALLEL SESSION A

Chairperson Jumpei Fujimoto

15.00 **Edward Boos** (Institute of Nuclear Physics, MSU, Moscow)
Gauge invariant classes of Feynman diagrams and
physical applications.
15.20 **Maksim Nekrasov** (Institute of High Energy Physics, Protvino)
The gauge invariant description of W-pair production in
next-to-leading-order approximation.
15.40 **Per Osland** (University of Bergen, Bergen)
Three-neutrino MSW effect and the Lehmann mass matrix.
16.00 **Yuri Pirogov** (Institute of High Energy Physics, Protvino)
Toolkit for neutrino mixing.
16.20 **Luis Bento** (University of Lisbon, Lisbon)
Long range majoron fields and implications for neutrino oscillations.
16.40 **Coffee break**

Chairperson Martin Sachwitz

17.00 **Mikhail Dubinin** (Institute of Nuclear Physics, MSU, Moscow)
Higgs boson production at LHC in the states with two forward jets.
17.20 **Sofia Andringa-Dias** (Laboratory of Particle Interaction, Lisbon)
Search for Higgs with anomalous couplings at LEP.
17.40 **Alexander Belyaev** (Institute of Nuclear Physics, MSU, Moscow)
Supersymmetric Higgs pair production at hadron colliders.
18.00 **Mikhail Dolgopolov** (Samara State University, Samara)
Higgs bosons selfinteractions in 2-loop corrections to mass of lightest
MSSM Higgs boson.

September 15

PARALLEL SESSION B

Chairperson Vladimir Soloviev

15.00 **Yakov Shnir** (Institute for Theoretical Physics, University of Cologne, Koeln)
Bundles over moduli space of the Skyrme model.
15.30 **Alexander Tsyrulev** (Tver State University, Tver)
Gravitational fields with Yang-Mills curvature.
16.00 **Elena Vorontsova** (Tver State University, Tver)
Black hole vanishing in superstring inspired dilaton gravitational model.
16.40 **Coffee break**

Chairperson Alexaner Krutov

17.00 **Yuri Vernov** (Institute of Nuclear Physics, MSU, Moscow)
Generalized Heisenberg algebras and their regular representation
in an indefinite metric space.
17.20 **Yuri Chernichenko** (Gomel State Technical University, Gomel)
Non-local separable interactions and relativistic finite-difference quasi-potential.
17.40 **Dmitry Kumpjak** (Tver State University, Tver)
Spin dynamics of a massive neutral Dirac particle in the slightly
curved space-time with an arbitrary geometry.

September 16

PLENARY SESSION

Chairperson Kiyoshi Kato

9.30 **John Ellison** (D0, Fermilab and University of California)
The upgraded D0 detector for Tevatron run II.

10.10 **Martin Sachwitz** (DESY, Zeuthen)
Status of TESLA project.

10.50 **Sascha Schmeling** (ALEPH, CERN and Mainz University)
Recent ALEPH results on W physics.

11.30 **Coffee break**

Chairperson Edward Boos

12.00 **Roberto Pittau** (University of Torino, Torino)
Topics on four-fermion physics at electron-positron colliders.

12.40 **Dmitry Slavnov** (Department of Physics, MSU, Moscow)
Quantum mechanics with the permitted hidden parameters.

September 16

PARALLEL SESSION A

Chairperson Rudolf Faustov

15.00 **Vladimir Galkin** (Scientific Council of RAS for Cybernetics, Moscow)
Exclusive weak B decays to excited meson states.
15.20 **Vladimir Saleev** (Samara State University, Samara)
Two-particle hadronic decays of B_c mesons into charmonia.
15.40 **Valery Kiselev** (Institute of High Energy Physics, Protvino)
Decays and the lifetime of B_c meson in the QCD sum rules.
16.00 **Lidia Smirnova** (Institute of Nuclear Physics, MSU, Moscow)
Background rates for three major B-decays at the ATLAS detector.
16.20 **Nikolai Nikitin** (Institute of Nuclear Physics, MSU, Moscow)
Non-factorizable effects in $B^0 \leftrightarrow \bar{B}^0$ oscillation.
16.40 **Coffee break**

Chairperson Vadim Troitsky

17.00 **Fyodor Tkachov** (Institute for Nuclear Research, Moscow)
Jet algorithms. Wrapping up the subject.
17.20 **Valery Kiselev** (Institute of High Energy Physics, Protvino)
Heavy quark potential.

September 16

PARALLEL SESSION B

Chairperson Aleksey Alekseev

15.00 **Alexei Martynenko** (Samara State University, Samara)
Nucleon polarized structure functions and the Hydrogen hyperfine splitting.
15.30 **Vladimir Zykunov** (Gomel State Technical University, Gomel)
Lowest order electroweak radiative correction to single
W-production in polarized p-p collision.
16.00 **Vadim Khotilovich** (Belarusian State University, Minsk)
Analytical results for the processes of polirized e^+e^- annihilation $f_1\bar{f}_1 \to f_2\bar{f}_2\gamma$.
16.30 **Coffee break**

Chairperson Igor Volobuev

17.00 **Vasily Tarasov** (Institute of Nuclear Physics, MSU, Moscow)
Dynamical quantization.
17.20 **Sergey Vernov** (Institute of Nuclear Physics, MSU, Moscow)
Quantization close to periodic classical fields in terms of
Bogolyubov group variables.

September 18

PLENARY SESSION

Chairperson Vyacheslav Ilyin

9.30 **Nick van Eijndhoven** (ALICE, CERN and Utrecht University, Utrecht)
Heavy-ion physics within the ALICE LHC experiment.
10.10 **Jonas Rademacker** (LHCb, CERN and Merton College, Oxford)
LHCb RICH and related physics topics.
10.50 **Nichol Brummer** (ZEUS, DESY and Ohio State University)
Search for new physics of HERA.
11.30 **Coffee break**

Chairperson Anatoly Likhoded

12.00 **Sergei Slabospitsky** (Institute of High Energy Physics, Protvino)
Top quark physics in $t\bar{t}$ production and anomalous processes at LHC.
12.40 **Lev Dudko** (Institute of Nuclear Physics, MSU, Moscow)
Single top quark physics at LHC.

September 18

PARALLEL SESSION A

Chairperson Nikolai Zotov

15.00 **Anatoly Likhoded** (Institute of High Energy Physics, Protvino)
Charm in DIS and hadronic collisions.

15.20 **Olga Lukina** (Institute of Nuclear Physics, MSU, Moscow)
QCD tests in diffractive vector meson production at HERA.

15.40 **Boris Levchenko** (Institute of Nuclear Physics, MSU, Moscow)
Status of the instanton search at HERA.

16.00 **Sergey Troshin** (Institute of High Energy Physics, Protvino)
Diffraction and antishadow scattering at LHC.

16.20 **Andrei Arkhipov** (Institute of High Energy Physics, Protvino)
Three-body forces, single diffraction dissociation and shadow corrections for hadron-deuteron total cross-sections.

16.40 **Coffee break**

Chairperson Yakov Azimov

17.00 **Nikolai Zotov** (Institute of Nuclear Physics, MSU, Moscow)
BFKL and CCFM gluon dynamics in deep inelastic D^* production at HERA.

17.20 **Nikolai Skachkov** (Joint Institute for Nuclear Research, Dubna)
Rates estimation for gluon distribution measurment at LHC enegies with pp $\rightarrow$ gamma/Z0+1jet processes.

September 18

PARALLEL SESSION B

Chairperson Anatoliy Grashin

15.00 **Igor Cherednikov** (Joint Institute for Nuclear Research, Dubna)
Casimir energy for models with confined fermion field.
15.25 **Svetlana Belousova** (Gomel State University, Gomel)
The relativistic field theory effective Lagrangian of low-energy electromagnetic field interaction with spin-1/2 hadrons.
15.50 **Andrey Koshelkin** (Moscow Engineering Physics Institute, Moscow)
Vertex and two-particle Green's functions in non-equilibrium matter.
16.15 **Iryna Karas'** (Kharkov Institute of Physics and Technology, Kharkov)
Plasma wake field acceleration of charged particles by self-modulated long electron bunch.
16.40 **Coffee break**

Chairperson Per Osland

17.00 **Boris Arbuzov** (Institute of Nuclear Physics, MSU, Moscow)
Bogolyubov quasi-averages and symmetry breaking of model gauge theories.
17.30 **Ilya Ginzburg** (Institute of Mathematics, Novosibirsk)
Charge asymmetry - a poweful tool for study of different problems in high energy particle physics.

September 19

PLENARY SESSION

Chairperson Boris Arbuzov

9.30 **Doris Eckstein** (H1, DESY)
Proton Structure from H1 and ZEUS.
10.10 **Jacek Turnau** (H1, DESY)
Photon Structure from H1 and ZEUS.
10.50 **Igor Volobuev** (Institute of Nuclear Physics, MSU, Moscow)
How large are extra dimensions?
11.30 **Coffee break**

Chairperson Jacek Turnau

12.00 **Ilya Ginzburg** (Institute of Mathematics, Novosibirsk)
Why photon colliders are necessary?
12.40 **Edward Boos** (Institute of Nuclear Physics, MSU, Moscow)
Top quarks at Photon Linear Colliders.

September 19

PARALLEL SESSION A

Chairperson Andrey Shirokov

15.00 **Konstantin Gridnev** (Nuclear Physics Institute, SPbSU, Sankt-Petersburg)
Fragmentation of clasters states in light nuclei.
15.25 **Victor Mokeev** (Institute of Nuclear Physics, MSU, Moscow)
Nucleon resonance studies in double pion production by virtual photons.
15.50 **Alexei Illarionov** (Joint Institute for Nuclear Research, Dubna)
Polarization phenomena by deuteron fragmentation into pions.
16.15 **Igor Lokhtin** (Institute of Nuclear Physics, MSU, Moscow)
Diagnostics of quark-gluon plasma in ultrarelativistic nuclear collisions.
16.40 **Coffee break**

Chairperson Sergey Troshin

17.00 **Vladimir Uzhinskii** (Joint Institute for Nuclear Research, Dubna)
Method of estimation of cross-sections of high mass diffraction
dissociation processes in nucleus-nucleus interactions.
17.20 **Aida Galoyan** (Joint Institute for Nuclear Research, Dubna)
HIJING model prediction on squeeze-out of particles in nucleus-nucleus
interactions at super high energies.
17.40 **Anatoly Kotikov** (Joint Institute for Nuclear Research, Dubna)
The Gegenbauer polynomial technique: evaluation of a class of
massless Feynman diagrams.
18.00 **Anatoly Kotikov** (Joint Institute for Nuclear Research, Dubna)
The differential equation method: calculation of massive Feynman diagrams.
18.20 **Fyodor Tkachov** (Institute for Nuclear Research, Moscow)
New algebraic-numerical methods for loop integrals. Some one-loop experience.

September 19

PARALLEL SESSION B

Chairperson Yakov Shnir

15.00 **Ilya Smirnov** (Samara State University, Samara)
Loop corrections to pionium decay width.
15.25 **Anatoliy Grashin** (Moscow Engineering Physics Institute, Moscow)
Valence u- and d- distributions in thermodynamics model.
15.50 **Ivan Lukashevich** (Moscow Engineering Physics Institute, Moscow)
Flavor-asymmetry of sea quarks parton distributions.
16.15 **Harald Svendsen** (University of Oslo, Oslo)
A presentation of two methods for deriving high energy
limits of different models.
16.40 **Coffee break**

Chairperson Vladimir Andrianov

17.00 **Alexei Sissakian** (Joint Institute for Nuclear Research, Dubna)
On statistical description of very high multiplicity events.
17.30 **German Sharov** (Tver State University, Tver)
String models of mesons and baryons and Regge trajectories.
17.50 **Sergei Afonin** (Nuclear Physics Institute, SPbSU, Sankt-Petersburg)
Vector mesons in quasilocal quark models.
18.10 **Alexander Biryukov** (Samara State University, Samara)
Nonlinear interaction of oscillators.

September 20

PLENARY SESSION

Chairperson Victor Tsvetkov

9.30 **John Ellison** (D0, Fermilab and University of California)
Summary talk on experiment.
10.00 **Kiyoshi Kato** (Kogakuin University, Tokyo)
Summary talk on phenomenology.
10.30 **Boris Arbuzov** (Institute of Nuclear Physics, MSU, Moscow)
Summary talk on theory.
11.00 **Closing**