Program of the XIVth International Workshop on High Energy Physics and Quantum Field Theory

Moscow, Russia, 27 May - 2 June 1999

May 27

GENERAL PLENARY SESSION: Chairperson Victor Savrin

9.00 **Opening**
9.30 **Michele Gallinaro** (CDF, Fermilab)
Recent results from CDF.
10.10 **Salvatore Mele** (CERN, L3)
L3 results at LEP2.
10.50 **Nikita Nekrassov** (ITEP, Moscow)
M-theory: existence theorem.

PLENARY SESSION A: Chairperson Boris Arbuzov

12.00 **Denis Perret-Gallix** (LAPP, Annecy-Le-Vieux)
Automatic amplitude calculation and event generator for colliders physics: CompHEP and GRACE.
12.40 **Giampiero Passarino** (INFN, Torino University, Torino)
Precision calculation project: a report for LEP1 studies.

PLENARY SESSION B: Chairperson Ruben Mkrtchyan

12.00 **Arkady Tseytlin** (Imperial College, London; Lebedev Physical Institute)
Type 0 strings and gauge theories.
12.40 **Irina Aref'eva** (Steklov Mathematical Institute, Moscow)
Holography – profit or just troubles?

PARALLEL SESSION A: Chairperson Barbara Mele

15.00 **Alessandro Ballestrero** (INFN; Institute of Phisics, Torino)
PHACT: Helicity amplitudes for present and future colliders.
15.20 **Alexander Pukhov** (Institute of Nuclear Physics, MSU, Moscow)
Optimization of spinor helicity amplitude technique for automatic calculations.
15.40 **Vyacheslav Ilyin** (Institute of Nuclear Physics, MSU, Moscow)
CompHEP-PYTHIA interface: tools for event generation.
16.00 **Victor Andreev** (Gomel State University, Gomel)
One kind of spinor technique for massive fermions.
16.20 **Edward Rahmetov** (Institute of Nuclear Physics, MSU, Moscow)
The strategy of regions in asymptotic expansion of two-loop vertex Feynman diagrams.

Chairperson Alessandro Ballestrero

17.00 **Edward Boos** (Institute of Nuclear Physics, MSU, Moscow)
Single W production at linear colliders.

17.20 **Keijiro Tobimatsu** (Kogakuin University, Tokyo)
A study of the radiative correction to Bhabha scattering with QEDPS Monte Carlo.

17.40 **Fyodor Tkachov** (Institute for Nuclear Research, Moscow)
On the structure of systematic perturbation theory with unstable fields.

18.00 **Anna Skatchkova** (Joint Institute for Nuclear Research, Dubna)
W+jets production at LHC – VECBOS, PYTHIA and CompHEP comparison .

18.20 **Mark Jack** (DESY, Zeuthen)
QED radiative corrections to $e^+e^- \to f^+f^-$ with realistic cuts at LEP energies and beyond.

PARALLEL SESSION B: Chairperson Irina Aref'eva

15.00 **Mans Henningson** (Chalmers University of Technology, Goteborg)
Surface observables and the Weyl anomaly.

15.40 **Leonid Chekhov** (Steklov Mathematical Institute, Moscow)
AdS/CFT correspondence at finite temperature.

16.20 **Michela Petrini** (Blackett Laboratory, London)
Confinement and condensates without fine tuning in supergravity duals of gauge theories.

Chairperson Arkady Tseytlin

17.00 **Ruslan Metsaev** (Lebedev Physical Institute, Moscow)
The light cone formalism in anti–de Sitter space.

17.30 **Oleg Rytchkov** (Steklov Mathematical Institute, Moscow)
Massive Rarita-Schwinger field in the AdS/CFT correspondence.

17.50 **Alexey Koshelev** (Physics Department, MSU, Moscow)
SU(2) D0–branes dynamics.

18.10 **Armen Nersessian** (Joint Institute for Nuclear Research, Dubna)
The geometric Lagrangians for spinning particles.

18.30 **Konstantin Alkalaev** (Department of Physics, Tomsk State University)
Consistent interacting dynamics of 3D spinning particle in external U(1)–gauge field.

GENERAL PLENARY SESSION: Chairperson Denis Perret-Gallix

9.30 **Werner Witzeling** (CERN, ATLAS)
The ATLAS detector – a status report.

10.10 **Lev Lipatov** (NPI, St.Petersburg)
Integrability of the reggeon interactions in QCD.

10.50 **Anatoly Logunov** (IHEP, Protvino)
Evolution of the Universe and the graviton mass.

PLENARY SESSION A: Chairperson Nikolai Zotov

12.00 **Constantinos Foudas** (DESY, ZEUS)
Photon structure from HERA.

12.40 **Robert Lahmann** (DESY, H1)
Proton structure.

PLENARY SESSION B: Chairperson Damiano Anselmi

12.00 **Eric Bergshoeff** (Institute for Theoretical Physics, University of Groningen)
Solitons and extended objects.
12.40 **Alexander Gorsky** (Institute for Theoretical and Experimental Physics, Moscow)
Branes and hidden integrability in SUSY YM theories.

May 28

PARALLEL SESSION A: Chairperson Yuri Pirogov

15.00 **Ard van Sighem** (ZEUS; NIKHEF, Amsterdam)
ep scattering at high Q2 at HERA.
15.30 **Maurizio Iori** (Rome University, Rome)
Charm hadroproduction results from SELEX (E781).
16.00 **Nelli Pukhaeva** (CERN, DELPHI)
Bose-Einstein correlations between particles from different Ws in $ee \to W^+W^-$ events.
16.20 **Alexander Sidorov** (Joint Institute for Nuclear Research, Dubna)
The QCD analysis of the CCFR data for xF_3: higher twists and $\alpha_s(M_Z)$
extractions at the NNLO and beyond.

Chairperson Yakov Azimov

17.00 **Nikolai Zotov** (Institute of Nuclear Physics, MSU, Moscow)
Pomeron intercept and BFKL gluon dynamics in D* and
J/Psi meson production at HERA.
17.20 **Victor Kim** (Nuclear Physics Institute, St.Petersburg)
BFKL QCD pomeron and optimal renormalization.
17.40 **Sergey Alekhin** (Institute for High Energy Physics, Protvino)
The QCD analysis of recent νN data from Tevatron.
18.00 **Vladimir Saleev** (Samara State University, Samara)
Ω^*_{ccc} production via fragmentation at LHC. Heavy baryon production.
18.20 **Pavel Starovoitov** (Minsk State University, Minsk)
On two-photon creation of lepton pairs in hadron-hadron collisions.

PARALLEL SESSION B: Chairperson Eric Bergshoeff

15.00 **Ruben Mkrtchyan** (Yerevan Physics Institute, Yerevan)
On a different formulations of self–dual fields theories.
15.40 **Gysbert Zwart** (Utrecht University, Utrecht)
U duality of the Born-Infeld theory.
16.00 **Sergey Krivonos** (Joint Institute for Nuclear Research, Dubna)
$N3D4 \to N3D3, 2, 1$ PBGS and superparticles.
16.20 **Anders Westerberg** (DAMTP; University of Cambridge, Cambridge)
Supersymmetric brane actions from interpolating dualisations.

Chairperson Victor Berezin

17.00 **Andrey Demichev** (Institute of Nuclear Physics, MSU, Moscow)
Ultraviolet behaviour of quantum field theories on noncommutative space-time.

17.50 **Norma Mankoc-Borstnik** (Josef Stefan Institute, University of Ljubljana)
Unification of spins and charges.
18.20 **Elena Melkumova** (Physics Department, MSU, Moscow)
Gravitational and dilatonic radiation from oscillating membrane.
18.30 **Chiang-Mei Chen** (Physics Department, Moscow State University, Moscow)
Creation of M-branes in a supergravity background.

PARALLEL SESSION C: Chairperson Vladimi Belokurov

15.00 **Saul Youssef** (SCRI; Florida State University, Tallahassee)
Quantum mechanics and exotic probability theories.
15.20 **Oleg Khrustalev** (Physics Department, MSU, Moscow)
Quantum robots and principe of complementarity.
15.40 **Vasily Tarasov** (Institute of Nuclear Physics, MSU, Moscow)
Quantum theory and nonhamiltonian systems.
16.00 **Vladimir Belokurov** (Institute of Nuclear Physics, MSU, Moscow)
Convergent series of perturbation theory.
16.20 **Aleksander Biryukov** (Samara State University, Samara)
Problems of quantization in golomorphic space.

Chairperson Aleksander Biryukov

17.00 **Alexander Silenko** (Belarusian State University, Minsk)
Use of Foldy–Wouthuysen representation in relativistic quantum theory.
17.20 **Sergei Vernov** (Institute of Nuclear Physics, MSU, Moscow)
Bogolubov group variables for Poincare–invariant systems.
17.30 **Andrei Moussienko** (Semenov Institute of Chemical Physics, Moscow)
One–dimensional topological solitons in discrete space–time as the model of fermions.
17.40 **Ludmila Petrova** (Cybernetics Department, MSU, Moscow)
External differential forms in field theory.
18.00 **Victor Makeev** (INFN; Institute of Nuclear Physics, MSU, Moscow)
N^* investigation in exclusive two pion production 20 by photons.

May 29

GENERAL PLENARY SESSION: Chairperson Edward Boos

9.30 **Rolf-Dieter Heuer** (DESY, TESLA)
The TESLA project – status and perspectives.
10.10 **Peter Zerwas** (DESY, Theory Division)
Higgs physics and sypersymmetry at e^+e^- colliders.
10.50 **Augusto Sagnotti** (Rome University)
Strings, gravity and elementary particles.

PLENARY SESSION A: Chairperson Martin Sachwitz

12.00 **Rudolph Faustov** (Scientific Council for Cybernetics, Moscow)
Properties of heavy mesons in the relativistic quark models.
12.40 **Valery Telnov** (INP, Novosibirsk)
Photon colliders.

PLENARY SESSION B: Chairperson Augusto Sagnotti

12.00 **Alexey Starobirsky** (Landau Institute for Theoretical Physics, Moscow)
Transition from quantum to classical field theory in dynamical cosmological problems

12.40 **Andrey Barvinsky** (Lebedev Physical Institute, Moscow)
Singular Hawking-Turok instanton and open inflation from quantum cosmology.
Quantum Dirac constraints and path integral in relativistic gauge.

PARALLEL SESSION A: Chairperson Andre Sopczak

15.00 **Vladimir Rochev** (Institute for High Energy Physics, Protvino)
A new method for calculation of Green functions.

15.20 **Yuri Pirogov** (Institute of High Energy Physics, Protvino)
Generalized quark mixing matrices in the standard model with vector-like families.

15.40 **Fyodor Tkachov** (Institute for Nuclear Research, Moscow)
A scientific jet definition.

16.00 **Aleksey Alekseev** (Institute of High Energy Physics, Protvino)
Nonperturbative contributions to the QCD running coupling constant.

16.20 **Andrey Koshelkin** (Moscow Institute for Physics and Engineering, Moscow)
Formalism of diagram technique for two-particle Green's Functions in Matter.

Chairperson Andrey Shirokov

17.00 **Alexander Andrianov** (St.Petersburg State University, St.Petersburg)
Chiral and non-chiral quark models and their matching to QCD.

17.20 **Konstantin Sveshnikov** (Physics Department, MSU, Moscow)
Three-phase models of quark bags.

17.40 **Anatoly Koshkarov** (University of Petrozavodsk, Petrozavodsk)
The model of the duality symmetric electrodynamic without sources.

18.00 **Konstantin Stepan'yantz** (Physics Department, MSU, Moscow)
Quark confinement in MSSM QCD as a consequence of the supersymmetry and instanton effects.

18.20 **Pavel Baikov** (Institute of Nuclear Physics, MSU, Moscow)
Advanced method of solving recurrence relation for multi-loop Feynman integrals.

PARALLEL SESSION B: Chairperson Alexey Starobinsky

15.00 **Victor Berezin** (Institute for Nuclear Research, Moscow)
Quantum black holes: what we know about them?

15.30 **Mikhail Iofa** (Institute of Nuclear Physics, MSU, Moscow)
String-loop effects in extremal black holes.

16.00 **Vladimir Soloviev** (Institute of High Energy Physics, Protvino)
Black hole entropy from Poisson brackets (demystification of some calculations).

16.20 **Anton Rossikhin** (Physics Department, MSU, Moscow)
Self-action on locally flat spaces with conical singularities.

Chairperson Yuri Kubyshin

17.00 **Igor Volobuev** (Institute of Nuclear Physics, MSU, Moscow)
Howe dual pairs and the structure of gauge orbit spaces.

17.20 **Mikhail Vasiliev** (Lebedev Physical Institute, Moscow)
Higher spin gauge theories in D 3D4 and beyond.

18.00 **Yuri Vernov** (Institute for Nuclear Research, Moscow)
Regular representations of R–deformed Heisenberg algebra.

18.20 **Ilya Tipunin** (Lebedev Physical Institute, Moscow)
Spin chains, Rojers-Ramanujan like identities and the semi-indinite realization of the N 3D2 superconformal unitary representations.

May 31

GENERAL PLENARY SESSION: Chairperson Vyacheslav Ilyin

9.30 **Ann van Lysebetten** (CERN, DELPHI)
A review of triple gauge boson couplings and the W mass measurement at LEP2.

10.10 **Gaston Gutierrez** (D0, Fermilab)
Recent results from D0 and posibilities for the upgrade.

10.10 **Ziad Ajaltouni** (CERN, ALEPH)
WW physics with the ALEPH detector at LEP2.

10.50 **Andre Sopczak** (CERN, DELPHI)
Status of Higgs boson searches at LEP2

PLENARY SESSION A: Chairperson Alexander Andrianov

12.00 **Per Osland** (University of Bergen, Bergen)
Measuring trilinear couplings of the MSSM.

12.40 **Smain Kermiche** (CPPM, Marseille)
The recent beyond standard model results from H1 and ZEUS (HERA) experiements.

PLENARY SESSION B: Chairperson Stephen Hwang

12.00 **Augusto Sagnotti** (Rome University, Rome)
Supersymmetry breaking and open strings.

12.40 **Alexey Semikhatov** (Lebedev Physical Institute, Moscow)
Unitary representations ot the $N3D2$ super conformal algebra:
free-field resolutions and a semi-infinite ("quasiparticle") realization

PARALLEL SESSION A: Chairperson Mikhail Dubinin

15.00 **Alexander Andrianov** (St.Petersburg State University, 20 St.Petersburg)
Bound on masses of light composite Higgses from chiral symmetry sum rules.

15.30 **Boris Arbuzov** (Institute of High Energy Physics, Protvino)
Composite Higgs scalars in the model of dynamical breaking of the electroweak symmetry.

16.00 **Barbara Mele** (INFN; Rome University, Rome)
Rare decays of the top quark.

16.20 **Sergey Troitsky** (Institute for Nuclear Research, Moscow)
Strongly coupled supersymmetric GUTs.

16.20 **Vitaly Beilin** (Institute of Physics, Rostov State University, Rostov-on-Don)
FCNC with singlet quarks and single heavy quark production.

15.20 **Mikhail Ivanov** (Joint Institute for Nuclear Research, Dubna)
Dyson–Schwinger equations and heavy meson observables.

Chairperson Konstantin Sveshnikov

17.00 **Andrey Shirokov** (Institute of Nuclear Physics, MSU, Moscow)
Parameter symmetry of boson models.

17.40 **Alexander Pankov** (Technical University of Gomel, Gomel)
Prospects on compositeness and new vector bosons at LC with polarization.

18.00 **Alexander Mazur** (Khabarovsk State Technical University, Khabarovsk)
Phase equivalent transformations of realistic NN interaction.

18.20 **Sergey Zaitsev** (Khabarovsk State Technical University, Khabarovsk)
Inverse scattering problem approximate method in discrete approach.

PARALLEL SESSION B: Chairperson Alexey Semikhatov

15.00 **Stephen Hwang** (Karlstad University, Karlstad)
3D gravity versus 2D conformal field theory.

15.40 **Sergey Prokushkin** (Lebedev Physical Institute of RAS, Moscow)
Cohomologies of currents of any spin in AdS_3.

16.00 **Alexander Sibiryakov** (Tomsk State University, Tomsk)
Explicit N 3D2 supersymmetry of higher spin fields.

16.20 **Arkady Segal** (Lebedev Physical Institute of RAS, Moscow)
On the explicitly N 3D2 supersymmetric AdS theory of massless higher spin fields.

Chairperson Igor Volobuev

17.00 **Vladimir Fainberg** (Lebedev Physical Institute, Moscow)
About Duffin-Kemmer equations for even spin particles.

17.30 **Boris Voronov** (Lebedev Physical Institute, Moscow)
On local variational differential operators in field theory.

17.50 **Simon Lyakhovich** (Physics Department, Tomsk State University, Tomsk)
BRST symmetry in a second class constrained theory.

18.10 **Maxim Grigoriev** (Lebedev Physical Institute, Moscow)
The zero locus reduction of the BRST differential.

18.30 **Vasiliy Dolgushev** (Physics Department, Tomsk State University, Tomsk)
Polynomial gauge invariants of bosonic string.

June 1

GENERAL PLENARY SESSION: Chairperson Giampiero Passarino

9.30 **Claire Shepherd-Themistocleous** (LHC−B; Cambridge University)
The LHCb experiment: detector and physics programme.

10.10 **Yuri Fisyak** (BNL, STAR)
RHIC physics program.

10.50 **Andrey Marshakov** (Lebedev Physical Institute, Moscow)
Strings, Witten-Seiberg theory and integrable systems.

11.30 Trans-Tur Company, Russia
Information about a new Foundation "Young scientists of Russia". (in Russian)

PLENARY SESSION A: Chairperson Yuri Fisyak

12.00 **Ludmila Sarycheva** (CERN, CMS and INP, MSU)
Heavy ion physics with CMS at LHC.

12.40 **Guy Paic** (CERN, ALICE)
ALICE at LHC − study of quark−gluon plasma.

PLENARY SESSION B: Chairperson Vladimir Fainberg

12.00 **Andrey Smilga** (University of Nantes)
Vacuum structure in supersymmetric Yang–Mills theories with any gauge group.
12.40 **Joseph Buchbinder** (Tomsk Pedagogical University)
Effective action of N 3D2 and N 3D4 supersymmetric field theories in harmonic superspace.

PARALLEL SESSION A:Chairperson Rudolph Faustov

15.00 **Pavel Pakhlov** (Institute for Theoretical and Experimental Physics, Moscow)
Prospects to study rare B decays with photons at LHCb.
15.20 **Alexander Krutov** (Samara State University, Samara)
On a possible estimation ot the constituent quark parametrs from
Jefferson-Lab experiments on pion form factor.
15.40 **Oleg Shro** (Samara State University, Samara)
Semileptonic decays function. Isgur–Wise function in relativistic hamiltonian dynamics.
15.50 **Vladimir Galkin** (Scientific Council for Cybernetics, Moscow)
Semileptonic B decays to orbitally exited D meson.
16.10 **Savely Karshenboim** (Mendeleev Institute for Metrology, St.Petersburg)
Exotic decay of positronium.
16.30 **Savely Karshenboim** (Mendeleev Institute for Metrology, St.Petersburg)
Current status of the bound state QED: precise tests and high order corrections.

Chairperson Savely Karshenboim

17.00 **Mikhail Dolgopolov** (Samara State University, Samara)
Pionium decay. Some corrections.
17.20 **Olga Guslyarova** (Samara State University, Samara)
Pionium decay in two photons. Polarizability and 20 electromagnetic
corrections to lifetime.
17.40 **Alexey Martynenko** (Samara State University, Samara)
Deep inelastic scattering and Lamb shift in muonic hydrogen.
18.00 **Olga Piskounova** (Lebedev Physical Institute, Moscow)
Leading/nonleading asymmetry between charmed meson spectra in pion and hyperon interaction.
18.20 **Mikhail Kalmykov** (Joint Institute for Nuclear Research, Dubna)
ON-SHELL2-package for calculation of the on-shell two-loop self-energy diagram with one mass.

PARALLEL SESSION B: Chairperson Andrey Smilga

15.00 **Dmitri Kazakov** (Joint Institute for Nuclear Research, Dubna)
Exploring softly broken SUSY gauge theories via grassmannian Taylor expansion.
15.30 **Konstantin Selivanov** (Institute for Theoretical and Experimental Physics, Moscow)
Tree form–factors in N 3D3 (N 3D4) supersymmetric Yang–Mills.
16.10 **Yuri Kubyshin** (Institute of Nuclear Physics, MSU, Moscow)
Instanton propagator in scalar model: exact expression and contribution to instanton induced processes.

Chairperson Boris Voronov

17.00 **Yakov Shnir** (University of Cologne, Koeln; IF NASB, Minsk)
The color-flavor transformation and low-energy QCD effective action.
Bundles over the moduli spaces of Skyrme Model.

17.20 **Grigory Pivovarov** (Institute for Nuclear Research, Moscow)
Light-front quantization of gluodynamics beyond the lc gauge.

17.50 **Petr Pronin** (Physics Department, Moscow State University, Moscow)
Anomalies and effective Lagrangians beyond the perturbative theory.

18.10 **Codoban Sorin** (Joint Institute for Nuclear Research, Dubna)
Approximate analytic solutions of RG equations for Yukawa and soft couplings in SUSY models.

18.20 **Oganes Khudaverdian** (Joint Institute for Nuclear Research, Dubna)
New invariant objects in antibrackets formalism.

June 2

PLENARY SESSION A: Chairperson Per Osland

9.30 **Yakov Azimov** (Nuclear Physics Institute, St.Peterburg)
Double−flavor oscillations and their specifics in 20 D−meson decays.

9.30 **Nikolai Krasnikov** (Institute for Nuclear Research, Moscow)
Search for supersymmetry at LHC.

10.10 **Emmanuelle Perez** (DESY, H1)
Phenomenology of SUSY and leptoquarks in *ep* collisions.

PLENARY SESSION B: Chairperson Joseph Buchbinder

9.30 **Valery Rubakov** (Institute for Nuclear Research, Moscow)
Induced charges as probes of low energy effective theories

10.10 **Damiano Anselmi** (CERN, Theory Department)
Exact results about conformal field theories in 4D and RG flows interpolating between them.

GENERAL PLENARY SESSION: Chairperson Mikhail Vasiliev

11.10 **Reisaburo Tanaka** (CERN, ALEPH)
Physics at LEP2 - present and future. W physics at LEP2.

11.50 **Kenneth Long** (Imperial College, London)
The outlook for HERA.

12.30 **Closing.**

11.10 **Nikita Stepanov** (CERN, CMS)
Physics with CMS detector at LHC.