

# Continuous Advances in QCD

April 16-19, 1998

## **Thursday, April 16**

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3-180 EE/CSci

- 8:15 - 9:00 a.m. Registration
- 9:00 - 9:05 a.m. Welcome
- 9:05 - 9:45 a.m. T. D. Lee, Columbia University  
"Solvable Gauge Models with Gribov Copies, Instantons and Winding Numbers"
- 9:45 - 10:25 a.m. Pierre van Baal, Instituut Lorentz for Theoretical Physics  
"Gribov's Horizon--A Vista on Non-Perturbative Gauge Theory"
- 10:25 - 11:00 a.m. Coffee Break
- 11:00 - 11:20 a.m. Krishna Rajagopal, MIT  
"Superconducting QCD"
- 11:20 - 11:40 a.m. Eduard Shuryak, SUNY-Stony Brook  
"QCD at High Density"
- 11:40 - 12:00 p.m. Alex Kovner, Oxford University  
"Wilson Renormalization Group at Low  $x$  Partons at Finite Density"
- 12:00 - 12:20 p.m. Dima Kharzeev, BNL-Riken Center  
"Long Range Interactions of Small Color Dipoles"
- 12:20 - 2:00 p.m. Lunch, East Wing, Campus Club, 4th Floor Coffman Union

## **Afternoon Session – 3-180 EE/CSci**

- 2:00 - 2:20 p.m. Robert Jaffe, MIT  
"Finite Quantum Corrections around Solitons in Renormalizable Field Theory"

- 2:20 - 2:40 p.m. Vladimir Braun, NORDITA  
"Conformal Partial Wave Expansions for Hadron Distribution Amplitudes in QCD"
- 2:40 - 3:00 p.m. K. Chetyrkin, University of Karlsruhe  
"QCD Matching and Low Energy Theorems for Effective Higgs Couplings"
- 3:00 - 3:20 p.m. Zvi Bern, UCLA  
"On the Relationship between QCD and Gravity and its Implications"
- 3:20 - 4:00 p.m. Coffee Break
- 4:00 - 4:20 p.m. A. V. Radyushkin, Thomas Jefferson Accelerator Facility  
"Nonforward Parton Distribution"
- 4:20 - 4:40 p.m. Ian Balitsky, CEBAF  
"Factorization for High-energy Scattering"
- 4:40 - 5:00 p.m. Ratindranath Akhoury, University of Michigan  
"The Longitudinal Structure Function at Large  $x$ "
- 5:00 - 5:20 p.m. John Hiller, University of Minnesota-Duluth  
"Pauli-Villars Regularization in a Discrete Light Cone Model"

**Parallel Session – 435 Tate Laboratory of Physics**

- 4:00 - 4:20 p.m. Eugene Levin, Tel Aviv University  
"Evolution Equations for High Parton Density QCD"
- 4:20 - 4:40 p.m. Raju Venugopalan, Neils Bohr Institute  
"Computing Gluon Productions in High Energy Nuclear Collisions"
- 4:40 - 5:00 p.m. Yuri Kovchegov, Columbia University  
"Running Coupling Effects in the Hard Pomeron"
- 5:00 - 5:20 p.m. Heribert Weigert, Cavendish Laboratory  
"Small- $x$  Parton Distributions of Large Hadronic Targets"
- 5:20 - 5:40 p.m. Dirk Rischke, BNL-Riken Center  
"Dynamics of Classical Yang-Mills Fields in Ultrarelativistic Nuclear Collisions"

## Friday, April 17

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3-180 EE/CSci

- 9:00 - 9:20 a.m. Jac Verbaarschot, SUNY-Stony Brook  
"Universal Behavior in QCD Dirac Spectra"
- 9:20 - 9:40 a.m. Frieder Lenz, University of Erlangen, Germany  
"The Center-Symmetric Phase of QCD"
- 9:40 - 10:00 a.m. Lisa Randall, MIT  
To be announced
- 10:00 - 10:20 a.m. Amihay Hanany, Institute for Advanced Study, Princeton  
"Branes and Gauge Theories in Various Dimensions and Supersymmetries"
- 10:20 - 11:00 a.m. Coffee Break
- 11:00 - 11:20 a.m. Ken Intriligator, UC-San Diego  
"Misleading Anomaly Matchings?"
- 11:20 - 11:40 a.m. Csaba Csaki, Lawrence Berkeley Laboratory  
"Confinement in  $N=1$  Supersymmetric Gauge Theories"
- 11:40 - 12:00 p.m. Andrei Marshakov, Lebedev Physics Institute, ITEP  
" $N=2$  Supersymmetric Gauge Theories and Integrable Systems"
- 12:00 - 12:20 p.m. Anton Kapustin, Institute for Advanced Study  
"Solving  $N=2$  SUSY Gauge Theories using D-branes"
- 12:20 - 2:00 p.m. Lunch, East Wing, Campus Club, 4th Floor Coffman Union

### Afternoon Session – 3-180 EE/C Sci

- 2:00 - 2:20 p.m. Ariel Zhitnitsky, University of British Columbia  
"Effective Lagrangian for Non-Supersymmetric Gauge Theories"
- 2:20 - 2:40 p.m. Matthew Strassler, Institute for Advanced Study  
"Phases of Gauge Theories: What Does Supersymmetry Teach Us?"
- 2:40 - 3:00 p.m. Nick Evans, Boston University  
"QCD Dynamics from M-Theory"

- 3:00 - 3:20 p.m. Mikhail Shifman, University of Minnesota  
"Supersymmetric Domain Walls"
- 3:20 - 4:00 p.m. Coffee Break
- 4:00 - 4:20 p.m. Andrei Smilga, ITEP  
"Domain Wall Zoo in Supersymmetric QCD"
- 4:20 - 4:40 p.m. Ian Kogan, Oxford University  
"On Supersymmetric Domain Walls, n Counting and Glued Potentials"
- 4:40 - 5:00 p.m. Igor Klebanov, Princeton University  
"Large N Gauge Theories, Black Holes and Strings"
- 5:00 - 5:20 p.m. Rob Pisarski, Brookhaven National Laboratory  
"Parity Odd Bubbles in Hot QCD"

## **Saturday, April 18**

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3-180 EE/CSci

- 9:00 - 9:20 a.m. Andrzej Czarnecki, Brookhaven National Laboratory  
"Perturbative QCD Calculations with Heavy Quarks: Status and Prospects"
- 9:20 - 9:40 a.m. Andre Hoang, UC-San Diego  
"Applications of Perturbative NRQCD"
- 9:40 - 10:00 a.m. Martin Beneke, CERN  
"The Threshold Expansion, Onium Decays and Non-relativistic Field Theory  
In Dimensional Regularisation"
- 10:00 - 10:20 a.m. Yu-Qi Chen, Ohio State University  
"An Explanation for the  $\rho \rightarrow \pi$  Puzzle of  $J/\psi$  and  $\psi'$  Decays"
- 10:20 - 11:00 a.m. Coffee Break
- 11:00 - 11:20 a.m. Matthias Neubert, University of Geneva  
"CP Violation in  $B \rightarrow Xs/g$  Decays as a Signature of New Physics"
- 11:20 - 11:40 a.m. Thomas Mannel, Universität Karlsruhe  
"Bounds on  $\Gamma$  from  $B \rightarrow K \pi$ "

- 11:40 - 12:00 p.m. Adam Falk, Johns Hopkins University  
"Final State Interactions in Hadronic B Decays"
- 12:00 - 12:20 p.m. Chris Sachrajda, University of Southampton, UK  
"The Computation of Power Corrections"
- 12:20 - 2:00 p.m. Lunch, Terrace, Campus Club, 4th Floor Coffman Union

**Afternoon Session – 3-180 EE/CSci**

- 2:00 - 2:20 p.m. Alexander Khodjamirian, University of Wurzburg  
"Exclusive Nonleptonic Decays of Heavy Mesons in QCD"
- 2:20 - 2:40 p.m. Zoltan Ligeti, UC-San Diego  
To be announced
- 2:40 - 3:00 p.m. Arkady Vainshtein, University of Minnesota  
"Heavy Flavor Decays and OPE in Two-dimensional 't Hooft Model"
- 3:00 - 3:20 p.m. Xiaofeng Guo, Columbia University  
"Transverse Momentum Broadening Due to Multiple Scattering"
- 3:20 - 4:00 p.m. Coffee Break
- 4:00 - 4:20 p.m. Alan White, Argonne National Laboratory  
"Solving QCD using Multi-Regge Theory"
- 4:20 - 4:40 p.m. Henning Heiselberg, NORDITA  
"Signals of QCD Matter at RHIC"
- 4:40 - 5:00 p.m. Edmond Iancu, Saclay, France  
"Effective Classical Theories for Hot QCD"
- 5:00 - 5:20 p.m. Larry Yaffe, University of Washington  
To be announced

## Sunday, April 19

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3-180 EE/CSci

- 9:00 - 9:20 a.m. Stan Brodsky, SLAC  
"Advances in Light-Cone-Quantized QCD"
- 9:20 - 9:40 a.m. Valentin Zakharov, Max-Planck Institute  
"Non-perturbative Physics at UV Scale in QCD"
- 9:40 - 10:00 a.m. Gregory Korchemsky, University of Paris-Sud, France  
"Conformal Bootstrap for the BFKL Pomeron" or "Nonperturbative Distributions and Power Corrections to Even Shapes"
- 10:00 - 10:20 a.m. Peter Arnold, University of Virginia  
"Real Time Response in Very High Temperature Field Theory"
- 10:20 - 11:00 a.m. Coffee Break
- 11:00 - 11:20 a.m. Boris Ioffe, presented by Andrei Smilga, ITEP  
"Proton Spin Content and Vacuum Topological Susceptibility in QCD Sum Rules"
- 11:20 - 11:40 a.m. Yutaka Hosotani, University of Minnesota  
"Complex Monopoles and Gribov Copies"