PROGRAM OF QCD 99

Montpellier 7-13th July 1999

1 Wednesday 7th Morning

1.1 Official opening

8h45 Welcome (S. Narison, Montpellier)

1.2 Jets and QCD studies at e^+e^- and hadron colliders

Chairman: S. Narison (Montpellier)

09h00-09h25 New tests of QCD from the SLD experiment (D. Muller, Slac)

09h30-09h45 Interconnection effects in WW and Z hadronic decays at DELPHI (O. Smirnova, Lund)

09h45-10h00 Bose-Einstein correlations in $e^+e^- \to W^+W^-$ at LEP2 from OPAL (V. Kartvelishvili, Manchester)

10h00-10h15 Bose-Einstein correlations in W^+W^- pair production at $\sqrt{s}$ = 189 GeV from L3 (J. van Dalen, Nikhef)

10h15-10h30 COMMON QUESTIONS FOR THE 3 TALKS

10h30-10h45 Hadronic final state interactions at ALEPH (V. Ghete, Cern)

10h50-11h05 **COFFEE-BREAK**

Chairman: J. Layssac (Montpellier)

11h05-11h20 Multihadron, b and W multiplicities at LEP2 from DELPHI (P. Abreu, Cern)

11h25-11h40 Bose-Einstein correlations (K. Zalewski, Cracow)

11h45-12h00 Can multiparticle correlations be described by present analytical QCD-calculations ? (F. Mandl, Vienna)

12h05-12h20 α_s measurement from DELPHI (U. Flagmeyer, Cern)

12h25-12h40 Study of the structure of hadronic events at LEP from L3 (S. Banerjee, Cern)

12h45 **LUNCH**

PROGRAM OF QCD 99

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2 Wednesday 7th Afternoon

2.1 Jets and QCD studies at e^+e^- and hadron colliders continued

Chairman: S. Bethke (Aachen)

15h30-15h50 Jet fragmentation studies at Tevatron (A. Safonov, Florida)

15h55-16h15 Jets and hadron production from Hera (T. Tsurugai, Tokyo)

16h20-16h35 Large k_T production of direct photons and neutral mesons from E706 (V. Zutshi, Fermilab)

16h40-16h55 The singular behaviour of tree level QCD amplitudes at NNLO (M. Grazzini, Firenze)

17h00-17h15 NNLO calculation of DIS and precision tests of QCD (F.J. Yndurain, Madrid)

17h20-17h35 COFFEE-BREAK

Chairman: A. Contogouris (M.C. Gill)

17h35-17h50 Exact gauge invariant mass dependence of α_s through 2 loops (M. Melles, Durham)

17h55-18h10 Mellin moments of DIS structure functions at 2 loops (S-O. Moch, Nikhef)

18h15-18h30 Complete renormalization group improvement - avoiding scale - dependence in QCD predictions (C.J. Maxwell, Durham)

18h35-18h50 Isolated photon production in polarized hadron collisions (S. Frixione, Cern)

18h55-19h10 Prompt photon hadroproduction and soft gluon resummation (S. Catani, Cern)

19h15-19h30 COMMON DISCUSSIONS ON JETS, FRAGMENTATIONS

19h45 WELCOME RECEPTION BY THE MAJOR OF MONTPELLLIER
Le Corum - Level 0: in front of the Salle Einstein

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Thursday 8th Morning

2.2 Structure functions

Chairman: F.J. Yndurain (Madrid)

09h00-09h20 Recent QCD results from CCFR and nuTeV (L. De Barbaro, Northwestern)

09h25-09h45 Structure functions from HERA (A. Pellegrino, Hamburg)

09h50-10h10 Recent spin physics results from HERMES (A. Simon, Freiburg)

10h15-10h30 Measurement of the photon structure functions at ALEPH (K. Affholderbach, Cern)

10h35-10h50 Double transverse and longitudinal spin asymmetrical effects in polarized hadron collisions (A . I . Akhmedov , Azerbaijan)

10h55-11h10: COFFEE-BREAK

Chairman: L. Trentadue (Roma)

11h10-11h25 Fracture functions in the very forward limit (B. White, Swansea)

11h30-11h45 The polarized gluon distribution and polarized photoproduction of hadron pairs (A.P. Contogouris, McGill)

11h50-12h05 Twist-3 polarized structure functions (A. Kodaira, Hiroshima)

12h10-12h30 Recent results in spin physics (R. Windmolders, Mons)

12h35-12h55 QCD tests from LHC (S. Tapprogge, Cern)

13h00 LUNCH

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Thursday 8th Afternoon

2.3 Diffractive QCD

Chairman: L. Montanet (Cern)

15h00-15h20 Diffraction and QCD at HERA (P. Julian, Liverpool)

15h25-15h40 Odderon-Pomeron Interference (C. Merino, Santiago de Compostella)

15h45-16h00 What is the color singlet distribution inside a virtual gluon ? (R. Peschanski, Saclay)

16h05-16h20 Optimisation of the single helicity-flip amplitude in elastic p-p collisons (A. Bates, Dublin)

16h25-16h40 $F_2^{D(4)}$ in the model of stochastic vacuum (O.E.Ramirez del Prado, Heidelberg)

16h45-17h00: COFFEE-BREAK

Chairman: S. Catani (Cern)

17h00-17h15 γ^*-γ^*-reactions at high energies (H.G. Dosch, Heidelberg)

17h20-17h35 NLO corrections to the BFKL pomeron (A. Lipatov: to be confirmed)

17h40-17h55 Combined analysis of diffractive and inclusive structure functions in the semiclassical framework (T. Gehrmann, Karlsruhe)

18h00-18h25 Overview on diffraction (L. Trentadue, Parma)

18h25-18h40 COMMON DISCUSSIONS ON STRUCTURE FUNCTIONS AND DIFFRACTION

18h45 PHOTO OF THE 1st WEEK GROUP
Meeting at the main entrance of the Corum

18h50 GUIDED VISIT OF THE OLD PART OF MONTPELLIER

Meeting at the main entrance of the Corum
Free for registered participants, but registration required upon your arrival in Montpellier

3 Friday 9th Morning

3.1 QCD spectral functions, τ-decays, strange quark mass

Chairman: M. Neubert (Slac)

09h00-09h15 Analysis of spectral functions in Lattice QCD with the maximum entropy method (M. Asakawa, Nagoya)

09h20-09h40 Hadronic spectral functions from OPAL (S. Menke, Slac)

09h45-10h00 QCD tests inspired in hypothetical tau leptons (R. Pelaez, Madrid)

10h05-10h20 Measuring the quark condensate from $\tau \to 3\pi + \nu_\tau$ (L. Girlanda, Orsay)

10h25-10h40 COFFEE-BREAK

Chairman: E. de Rafael (Marseille)

10h40-10h55 Strange quark mass using domain wall fermions (M. Wingate, Brookhaven)

11h00-11h20 Tau spectral functions and strange quark mass from ALEPH (E. Tournefier, Cern)

11h25-11h40 Strange quark mass from tau decays (A. Pich, Valencia)

11h45-12h05 Strange quark mass 99 (S. Narison, Montpellier)

12h10-12h25 COMMON DISCUSSIONS ON SPECTRAL FUNCTIONS AND QUARK MASSES

12h25 LUNCH

PROGRAM OF QCD 99

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4 Friday 9th Afternoon

4.1 Effective Theories, Weak matrix elements

Chairman: A. Pich (Valencia)

15h00-15h15 Pionium lifetime and $\pi\pi$ scattering lengths in generalized ChPT (H. Sazdjian, Orsay)

15h20-15h35 Effective field theory approach to pionium (J. Soto, Barcelona)

15h40-15h55 2-point function of $\Delta S = 1$ vector currents to 2-loop of CHPT (S. Durr, Washington)

16h00-16h25 Chiral perturbation theory (J. Gasser, Bern)

16h30-16h50 Hadron dynamics and quark structure (S. Rajeev, Rochester)

16h55-17h05 COFFEE BREAK

Chairman: J. Gasser (Bern)

17h10-17h30 The extended chiral quark model confronts QCD (A.A. Andrianov, Barcelona)

17h35-17h55 A new approach to weak amplitudes in large N_c (E. de Rafael, Marseille)

18h00-18h15 $\pi \to e^+e^-$ at large N_c (M. Knecht, Marseille)

18h20-18h35 Electroweak penguins at large N_c (S. Peris, Barcelona)

18h40-18h55 The $\Delta I = 1/2$ rule for kaon decays (J. Prades, Granada)

4.2 Malagasy folk dancings and musics 20h

Le Corum - Salle Einstein

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PROGRAM OF QCD 99

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5 Saturday 10th morning

5.1 CP-violation and Weak matrix elements

Chairman: E. de Rafael (Marseille)

09h00-09h20 ϵ'/ϵ from kTeV experiment (B. Hsiung, Fermilab)

09h25-09h45 ϵ'/ϵ from NA48 (B. Peyaud, Saclay)

09h50-10h00 ϵ'/ϵ in the standard model (M. Fabbrichesi, Trieste)

10h05-10h25 Theoretical status of ϵ'/ϵ (U. Nierste, Fermilab)

10h25-10h40 COMMON DISCUSSIONS ON EFFECTIVE THEORIES AND WEAK MATRIX ELEMENTS

10h40-10h55 COFFEE-BREAK

5.2 Gluonia and Exotic Hadrons

Chairman : L. Montanet (Cern)

10h55-11h15 Experimental status of the light exotic mesons 1^{-+} (S-U. Chung, Brookhaven)

11h20-11h40 The decays of scalar mesons in Crystal Barrel (K. Wittmack, Bonn)

11h45-12h05 Results from WA102 (A. Singovski, Cern)

12h10-12h30 Gluonia search at BES (C. Yuan, Beijing)

12h35-12h50 $\eta' \to \gamma\gamma$ and the topological charge (G. Shore, Cern)

12h55 LUNCH

PROGRAM OF QCD 99

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6 Saturday 10th Afternoon

6.1 Gluonia and Exotic Hadrons

Chairman: J.P. Stroot (Cern)

15h00-15h20 $p\bar{p}$ into $KK\pi$ production (U. Gastaldi, Legnaro)

15h25-15h45 Historical survey of baryonium in quasi-nuclear and quark-model approaches (J.M. Richard, Grenoble)

15h50-16h10 Identification of the glueballs and scalar meson nonet of lowest mass (P. Minkowski, Bern)

16h15-16h40 Status of the scalar mesons (L. Montanet, Cern)

16h45-17h00 COFFEE-BREAK

6.2 Heavy exotics

Chairman: S. Narison (Montpellier)

17h00-17h20 Some aspects of heavy hybrids in QCD effective theories (N. Brambilla, Vienna)

17h25-17h45 Heavy hybrids with constituent gluons (E. Swanson, North Carolina)

17h50-18h10 Heavy quarkonia on symmetric and asymmetric lattices (T. Manke, Tshukuba)

18h10-18h25 COMMON DISCUSSIONS ON GLUONIA AND EXOTICS

PROGRAM OF QCD 99

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7 Sunday 11th July

Excursion and Picnic 9h15-18h

- Departure of the bus at 9h15 am from the "Gare Routière" to Espiguette Beach
- Picnic at Espiguette Beach: sandwichs and fresh drinks offered by the organization.
- Visit of the Medieval Town Aigues Mortes

Evening Party 20h-23h30 at Mas de Saporta (Lattes)

- Departure of the bus at 19h15 am from the "Gare Routière" to Mas de Saporta
- Wine-tasting
- Dinner
- Tahitian folk dancings

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PROGRAM OF QCD 99

Montpellier 7-13th July 1999

8 Monday 12th morning

8.1 Non-Perturbative QCD, QCD at finite temperature

Chairman: H.G. Dosch (Heidelberg)

09h45-10h00 Lessons from the light-cone box (G. Leibbrandt, Guelph)

10h05-10h20 Chaos analyses in both phases of QED and QCD (N. Hoermann, Vienna)

10h25-10h40 $g_A(T)$ from QCD sum rules (M. Loewe, Santiago)

10h45-11h00 Σ-Λ-nucleon coupling from QCD sum rules (M. Nielsen, Sao Paulo)

11h05-11h20 QCD sum rule analysis of the field strength correlator (M. Eidemuller, Heidelberg)

11h25-11h40 COFFEE-BREAK

8.2 Non-Perturbative QCD, Power corrections

Chairman: A. Neveu (Montpellier)

11h40-11h55 Power corrections in the single dressed gluon approximation (E. Gardi, Paris)

12h00-12h15 Recent progress in power corrections (G. Salam, Milano)

12h20-12h40 Nonperturbative effects from small distances (V. Zakharov, Munich)

12h45 LUNCH

12h40 LUNCH

PROGRAM OF QCD 99

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9 Monday 12th Afternoon

9.1 Non-perturbative QCD

Chairman: V. Zakharov (Munich)

15h00-15h15 Spontaneously broken Yang-Mills-Higgs theory: renormalization proof by flow equations (V.F. Muller, Kaiserslautern)

15h20-15h35 Instantons in curvilinear coordinates (A.A. Abrikosov Jr, Itep)

15h40-15h55 Confining properties of abelian (projected) theories (D. Ebert, Cern)

16h00-16h15 Quark confinement in QCD due to topological solitons (K-I. Kondo, Chiba)

16h15-16h30 COMMON DISCUSSIONS ON NON-PERTURBATIVE QCD

16h30-16h45 COFFEE-BREAK

9.2 Heavy quarks: B and D decays, CP-violation

Chairman: K. Zalewski (Cracow)

16h45-17h05 Recent results from B and D decays from CLEO (P. Skubic, Oklahoma)

17h10-17h30 QCD factorization in nonleptonic B decays and implications for CP-violation (M. Neubert, Slac and Cornell)

17h35-17h50 The CP violating asymmetry in $B^{\pm} \to M\bar{M}\pi^{\pm}$ decays (T.N. Pham, Paris)

17h55-18h10 Decay of heavy baryons by di-quark method and CP violation (V.P. Gautam, Calcutta)

18h15-18h30 CP-violation at LHC (G. Wilkinson, Cern)

18h35-18h50 NLO QCD corrections to $B \to X_s\gamma$ in the SM, 2HDM, and supersymmetry (P. Gambino, Munich)

18h55-19h10 Gluino mediated B-decays (T. Hurth, Munich)

19h 15 PHOTO OF THE 2nd WEEK GROUP
Meeting at the main entrance of the Corum

9.3 Classic Music Concert 20h30

The Sextuor Impromptu group

at Le Corum - Salle Einstein

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PROGRAM OF QCD 99

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10 Tuesday 13th Morning

10.1 Heavy quarks continued: masses, potentials, productions

Chairman: J.M. Richard (Grenoble)

09h00-09h15 $\mathcal{O}(\alpha_s^3)$ conversion formulae for $\overline{MS}$, on-shell and euclidian quark masses:results and applications (K. Chetyrkin, Karlsruhe)

09h20-09h35 Upsilon expansion and applications (A. Hoang, Cern)

09h40-09h55 Heavy quarkonium and nonrelativistic effective field theories (A. Pineda, Cern)

10h00-10h15 The heavy quark potential in pNRQCD (A. Vairo, Vienna)

10h20-10h35 Heavy-quark potential at 2 loops (Y. Schroeder, Desy)

10h40-10h55 COFFEE-BREAK

Chairman: M. Neubert (Slac)

19h10-19h25 Predictions for beauty and charm lifetimes (M. Di Pierro, Southampton)

10h55-11h10 NLO QCD analysis of quarkonium production at Tevatron (A. Petrelli, Argonne)

11h15-11h30 Charmonium-hadron cross section in a nonperturbative QCD approach (F. Navarra, Sao Paulo)

11h35-11h50 New extraction of color-octet NRQCD matrix elements from charmonium hadroproduction (A. Sanchis-Lozano, Valencia)

11h55-12h10 Top production (M. Beneke, Cern)

12h10-12h25 COMMON DISCUSSIONS ON HEAVY QUARKS

12h25 CLOSING OF THE CONFERENCE

12h45 FAREWELL RECEPTION