

Quark Confinement and the Hadron Spectrum XI



Sunday, September 7, 2014 - Friday, September 12, 2014

St. Petersburg

Scientific Program

Section A, Focus Subsection

applications of strongly interacting matter and chiral matter to material science.

Section A: Vacuum Structure and Confinement

Vacuum configurations (vortices, monopoles, calorons, ...) and other lower-dimensional structures in the QCD vacuum; QCD vacuum wave functionals; eigenmode spectrum of covariant (Dirac, Laplacian) operators, connection to confinement and topology; ghost/gluon propagators and confinement criteria; new analytic approaches to confinement; the chiral magnetic effect; numerical studies of the QCD string; renormalons and power corrections.

Section B: Light Quarks

Chiral and soft collinear effective theories; sum rules; lattice; Schwinger-Dyson equations; masses of light quarks; light-quark loops; phenomenology of light-hadron form factors, spectra and decays; structure functions and generalized parton distributions; exotics and glueballs; experiments.

Section C: Heavy Quarks

Heavy-light mesons, heavy quarkonia, heavy baryons, heavy exotics and related topics: phenomenology of spectra, decays, and production; effective theories for heavy quarks (HQET, NRQCD, pNRQCD, vNRQCD, SCET); sum rules for heavy hadrons; lattice calculations of heavy hadrons; heavy-quark masses determination; experiments.

Section D: Deconfinement

QCD at finite temperature; quark-gluon plasma detection and characteristics; jet quenching; transportation coefficients; lattice QCD and phases of quark matter; QCD vacuum and strong fields; heavy-ion experiments.

Section E: QCD and New Physics

Physics beyond the Standard Model with hadronic physics precision experimental data and precision calculations.

Section F: Nuclear and Astroparticle Physics

Nuclear matter; nuclear forces; quark matter; neutron and compact stars.

Section G: Strongly Coupled Theories

Hints on the confinement/deconfinement mechanisms from supersymmetric and string theories; strongly coupled theories beyond the Standard Model; applications of nonperturbative methods of QCD to other fields.

Poster Session

All topics covered at the conference.

Plenary talks

Only invited to plenary speakers