1º Encontro Nacional da Associação de Física de Interacções Fortes

Report of Contributions

https://indico.cern.ch/e/646710

Contribution ID: **1** Type: **not specified**

Abertura

Friday 14 July 2017 10:30 (30 minutes)

Contribution ID: **2** Type: **not specified**

Spin 0 and spin 1 low-lying meson spectra within a chiral model with explicit symmetry breaking effects.

Friday 14 July 2017 11:00 (30 minutes)

An NJL-type three-flavor quark model with a complete set of explicit chiral symmetry breaking terms is extended to accommodate spin 1 mesons upon bosonization. The bosonized Lagrangian is analyzed up to quadratic order in the
meson fields. Analytic relations between spin 0 and spin 1 meson masses are obtained. The vector mesons are shown to play a major role in the model's predictions for the constituent quark masses. Finally, it is shown that the parameters can be adjusted to accurately reproduce the four low-lying meson nonets.

Author: MORAIS, Jorge (FCTUC / CFisUC)

Co-authors: HILLER, Brigitte (CFisUC); OSIPOV, A. A. (JINR)

Presenter: MORAIS, Jorge (FCTUC / CFisUC)

Contribution ID: **3** Type: **not specified**

Magnetized QCD phase diagram

Friday 14 July 2017 11:30 (30 minutes)

The effects of external magnetic fields on the phase diagram structure of QCD are studied. We use NJL-type models to investigate the impact of magnetic fields on both chiral and deconfinement phase transitions. We focus on possible consequences of the Inverse Magnetic Catalysis effect on Critical-End-Point (CEP).

Author: FERREIRA, Márcio (CFisUC)

Co-authors: COSTA, Pedro (CFisUC, University of Coimbra); PROVIDÊNCIA, Constança (University of Coimbra)

Presenter: FERREIRA, Márcio (CFisUC)

Contribution ID: **4** Type: **not specified**

Hot gluons on the lattice: how do gluons propagate in a hot and non-dense medium?

Friday 14 July 2017 12:00 (30 minutes)

The gluon propagator at finite temperature is investigated via lattice simulations focusing on the volume and lattice spacing dependence and its interpretation as a massive-type bosonic propagator. Moreover, we compute the corresponding spectral density and study the violation of spectral positivity. Finally, we explore the dependence of the gluon propagator on the phase of the Polyakov loop.

Author: SILVA, Paulo (CFisUC)

Co-authors: Dr OLIVEIRA, Orlando (CFisUC); DUDAL, David; ROELFS , M. (KU-Leuven, campus Kortrijk); BICUDO, Pedro (IST Lisboa); CARDOSO, Nuno (Instituto Superior Tecnico)

Presenter: SILVA, Paulo (CFisUC)

Contribution ID: **5** Type: **not specified**

Gluon and Ghost Dynamics from Lattice QCD

Friday 14 July 2017 14:00 (30 minutes)

The two point gluon and ghost correlation functions and the three gluon vertex are investigated, in the Landau gauge, using lattice simulations. For the two point function, we discuss the approach to the continuum limit looking at the lattice spacing and volume dependences. The analytical structure of the propagators is also investigated by computing the corresponding spectral functions using an implementation of the Thikonov regularisation to solve the integral equation. For the three point function we report results when the momentum of one of the gluon lines is set to zero and discuss its implications

Author: OLIVEIRA, Orlando (CFisUC)

Co-authors: DUARTE, A. G. (CFisUC); DUDAL, D. (U. Leuven); SILVA, Paulo (CFisUC)

Presenter: OLIVEIRA, Orlando (CFisUC)

Contribution ID: **6** Type: **not specified**

Hadron production and suppression in hadron collisions

Friday 14 July 2017 14:30 (30 minutes)

The LHC provides unique datasets gathered by colliding different hadron species at different energies. These rich data are explored towards shedding light on the QCD mechanisms of hadroproduction and suppression. We present a selection of related measurements performed in the heavy flavour sector.

Author: LEONARDO, Nuno (LIP)

Presenter: LEONARDO, Nuno (LIP)

Contribution ID: **7** Type: **not specified**

Tetraquark resonances computed with static lattice QCD potentials and scattering theory

Friday 14 July 2017 15:00 (30 minutes)

We study tetraquark resonances with lattice QCD potentials computed for two static quarks and two dynamical quarks, the Born-Oppenheimer approximation and the emergent wave method of scattering theory. As a proof of concept we focus on systems with isospin I = 0, but consider different relative angular momenta l of the heavy b quarks. We compute
the phase shifts and search for S and T matrix poles in the second Riemann sheet. We predict a new tetraquark resonance for l =1, decaying into two B mesons, with quantum numbers I(JP) = 0(1-), mass m= 10576 (+4 -4) MeV and decay width Gamma = 112 (+90 -103) MeV.

Author: BICUDO, Pedro (IST Lisboa)

Co-authors: CARDOSO, Marco (Instituto Superior Técnico); PETERSEN, Antje (DESY); PFLAUMER, Martin (Goethe-Universität Frankfurt am Main); WAGNER, Marc (Goethe University Frankfurt)

Presenter: BICUDO, Pedro (IST Lisboa)

Contribution ID: **8** Type: **not specified**

Mesa redonda: Futuro e oportunidades das interacçoes fortes.

Friday 14 July 2017 16:00 (1 hour)

Grupo de discussão moderado por Brigitte Hiller (CFisUC) e Pedro Bicudo (IST)