ID de Contribution: **162** Type: **Poster**

Studying the gluon mass from bound states of heavy quarks

One of the main goals of QCD is to recover hadronic properties from the interaction between quarks and gluons. The Faddeev-Popov Lagrangian has been successful in predicting strong interactions at high energy scales. In this regime (UV) the strong interaction becomes less intense which allows perturbative calculations. However, at low energies (IR), the Faddeev-Popov method fails.

The calculation of the coupling constant in the lattice gives a hopeful result: its value does not diverge at low energies. In addition, when calculating the gluon propagator, its behavior at low energies (in Landau gauge) corresponds to that of a massive particle. This differs substantially from what was observed by Faddeev-Popov, who considers the gluon to be a massless boson. This led to retaking the idea that G.Curci and R.Ferrari presented in the 70s, about a Yang Mills theory with massive mediating particles.
In this work we present the preliminary results of the study of nonrelativistic bound states of heavy quarks, where we calculate the spectrum of mesons solving Schrodinger equation with corrections obtained from the one-(massive gluon) exchange potencial.

Auteur principal: Dr BENITEZ MARTINEZ, Florencia (Universidad de la República, Uruguay)

Orateur: Dr BENITEZ MARTINEZ, Florencia (Universidad de la República, Uruguay)