Contribution ID: **37** Type: **not specified**

Quark mass function from a OGE-type interaction in Minkowski space

Wednesday 30 January 2019 16:30 (30 minutes)

I present the first results for the quark mass function in Minkowski space in both the spacelike and timelike regions calculated from the same quark-antiquark interaction kernel used in the latest meson calculations within the Covariant Spectator Theory. This kernel consists of a Lorentz vector effective one-gluon-exchange-type interaction, a vector constant, and a mixed scalar-pseudoscalar covariant linear confining interaction that does not contribute to the mass function. Our results are obtained in a general linear covariant gauge, their gauge dependence is analyzed and the Yennie gauge is identified as the appropriate gauge to be used in our calculations. Our results are compared in the spacelike region to the existing lattice QCD data and we find good agreement.

Primary authors: BIERNAT, Elmar (Instituto Superior Tecnico, Universidade de Lisboa); Prof. GROSS, Franz (Thomas Jefferson National Accelerator Facility (JLab), Newport News, Virginia 23606, USA and College of William and Mary, Williamsburg, Virginia 23188, USA); Prof. PEÑA, Teresa (CFTP, Departamento de Física, Instituto Superior Técnico, Universidade de Lisboa, Avenida Rovisco Pais 1, 1049 Lisboa, Portugal); STADLER, Alfred (University of Évora); LEITÃO, Sofia (IST)

Presenter: BIERNAT, Elmar (Instituto Superior Tecnico, Universidade de Lisboa)