

STARS2013 - 2nd Caribbean Symposium on Cosmology, Gravitation, Nuclear  
and Astroparticle Physics / SMFNS2013 - 3rd International Symposium on  
Strong Electromagnetic Fields and Neutron Stars



Contribution ID: 50

Type: **Poster**

## Chiral Magnetic Effect in QCD and its analogy in QED

We discuss the so-called the Chiral Magnetic Effect in in QCD in a quark magnetized plasma under the wider view supplied by the consideration of the polarization modes arising from the structure of the polarization operator of charged particles in presence of an external magnetic field. We concentrate in the search of a QED analogy in a medium to the QCD chiral magnetic case, by discussing the propagation modes in the case of symmetric and non-symmetric cases under charge conjugation. In that medium not only transverse modes, but also the longitudinal one is present. In the latter case we calculate the conductivity associated to an electromagnetic current in the direction of the magnetic field, obtaining a correspondence with the Chiral Magnetic Effect in QCD. The massless limit as well as the zero temperature case are discussed.

**Primary authors:** PÉREZ ROJAS, Hugo (Instituto de Cibernética, Matemática y Física (ICIMAF), La Habana, Cuba); ACOSTA AVALO, Jorge Luis (Facultad de Física, Universidad de La Habana, Cuba)

**Presenter:** ACOSTA AVALO, Jorge Luis (Facultad de Física, Universidad de La Habana, Cuba)

**Track Classification:** STARS2013