Contribution ID: 126 Type: not specified

## Gell-Mann-Oakes-Renner relation in external magnetic fields at zero temperature

Thursday, 6 August 2020 14:20 (20 minutes)

We present results of chiral condensates, masses and decay constants of neutral pseudo scalar mesons in (2+1)-flavor QCD in the presence of external magnetic fields at zero temperature. We discuss the validity of Gell-Mann-Oakes-Renner relation in a wide region of magnetic field strength eB up to around 3.5 GeV<sup>2</sup>. The simulations were performed on  $32^3 \times 96$  lattices using the Highly Improved Staggered Quarks (HISQ) action with a single lattice cutoff a=0.117 fm and  $m_\pi \approx$  220 MeV. Sixteen values of eB along the z direction up to around 3.5 GeV<sup>2</sup> have been applied in the simulation.

Primary author: WANG (\*), Xiao-Dan (Central China Normal University)

Co-authors: DING, H.-T.; LI, S.-T.; TOMIYA, A.; WANG, X.-D.; ZHANG, Y.

**Presenter:** WANG (\*), Xiao-Dan (Central China Normal University)

**Session Classification:** QCD at nonzero Temperature and Density

Track Classification: QCD at nonzero Temperature and Density