



Contribution ID: 31

Type: **Talk**

Anomalous Currents and Constitutive Relations of a Chiral Hadronic Superfluid

Saturday, 5 September 2020 16:30 (25 minutes)

The anomalous currents of two-flavor chiral nuclear matter in the presence of chiral imbalance are computed, using recently developed methods exploiting generalized transgression, which facilitates the evaluation of both the equilibrium partition function and the covariant currents. The constitutive relations for both the broken and unbroken phase of the theory are studied and the out-of-equilibrium nondissipative transport coefficients determined. In the superfluid phase, the vector covariant currents exhibit nondissipative chiral electric, magnetic, and vortical effects, the latter governed by chiral imbalance. This work is based on Ref. [1]. Other references are [2-4].

- [1] J.L. Mañes, E. Megias, M. Valle, M.A. Vazquez-Mozo, JHEP 1912 (2019) 018. arXiv: 1910.04013[hep-th].
- [2] K. Fukushima and K. Mameda, Phys. Rev. D86 (2012) 071501, arXiv: 1206.3128.
- [3] J.L. Mañes, E. Megias, M. Valle, M.A. Vazquez-Mozo, JHEP 1811 (2018) 076. arXiv: 1806.07647[hep-th].
- [4] T. Brauner and H. Kolesova, Nucl. Phys. B945 (2019) 114676. arXiv:1809.05310.

Is this abstract from experiment?

No

Is the speaker for that presentation defined?

Yes

Name of experiment and experimental site

N/A

Internet talk

Yes

Details

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Session Classification: Workshop on QCD