

# Seminar

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## **Does the chiral magnetic effect change the dynamic universality class in QCD?**

Beam-Energy-Scan Program has two important goals: one is the search for the anomaly-induced transport phenomena called the chiral magnetic effect (CME) and the other is the search for the QCD critical point between the hadron and quark-gluon plasma phases. Since dynamic critical phenomena generally depend on low-energy gapless modes, it is a priori nontrivial whether the collective gapless mode called the chiral magnetic wave stemming from the CME affects the dynamic universality class in QCD. To address this question, we study the dynamic critical phenomena near the second-order chiral phase transition in massless two-flavor QCD under an external magnetic field. By applying the dynamic renormalization-group analysis to the Langevin-type low-energy effective theory near the phase-transition temperature, we find that the inclusion of the CME qualitatively changes the dynamic universality class from model E to model A within the conventional classification by Hohenberg and Halperin.

**Tuesday, 08.10.2019, 14:15 Uhr**

**Place: D6-135**