

## **Nonperturbative quark-flavor violation in topological susceptibility at hot QCD**

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The topological susceptibility is a crucial probe in studying the QCD theta-vacuum structure and the axial anomaly. So far, some analyses on the topological susceptibility have been done based on chiral effective models. However, the flavor singlet nature for the theta-parameter has not been taken into account, so that the topological susceptibility in the previous studies would have a lack of the underlying property of QCD. In this talk, we will discuss the thermal property of the topological susceptibility by taking into account the flavor singlet nature. We will then show that the topological susceptibility nonperturbatively gets a significant flavor violation signaled by a sizable strange-quark condensate-contribution at around the chiral crossover.

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