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Determination of deconfinement transition from Roberge-Weiss periodicity

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In this talk, I will report recent progress of our study on the confinement-deconfinement transition in QCD from topological view points. We have proposed a new determination of the confinement-deconfinement transition by using the imaginary chemical potential. The imaginary chemical potential can be interpreted as the Aharonov-Bohm phase and then an analogy of the topological order suggests that the Roberge-Weiss endpoint would define the deconfinement temperature. Based on the topological property, we can construct a new quantity which describes the confinement-deconfinement transition. This quantity is defined as the integral of the quark number susceptibility along the closed loop of the dimensionless imaginary chemical potential.

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