

茨城大学素粒子論研究室セミナー

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日時： 2018/7/20 (金) 16:30-17:30

場所： E-301

Title： Recent progress in 't Hooft anomaly matching

Abstract： Anomaly matching constrains low-energy physics of strongly-coupled field theories. It has been recently extended to the theories with one-form symmetries including $SU(N)$ Yang-Mills theory with $\theta = \pi$. In this talk, we show that we develop a systematic procedure for deriving an 't Hooft anomaly of the circle-compactified theory starting from the anomaly of the original uncompactified theory without one-form symmetries, where the twisted boundary condition for the compactified direction plays a pivotal role. As an application, we consider \mathbb{Z}_N -twisted $\mathbb{C}P^{N-1}$ sigma model and massless \mathbb{Z}_N -QCD, and compute their anomalies explicitly. We also discuss constraints on finite- (T, μ) phase diagram of \mathbb{Z}_N -QCD based on the anomaly matching.