物理学术报告

Physics Seminars (biweekly)

Title: Stacking Group Structure of 't Hooft Anomalies and Fermionic Topological Phases

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Time: 2:00 pm, Tuesday, September 24, 2024

Venue: Conference Hall 104, Science Building, Tsinghua University

Abstract

It is well-known that gauging a symmetry in quantum field theory may lead to inconsistencies due to anomalies. These 't Hooft anomalies are intrinsically linked to symmetry-protected topological phases in one higher dimension. Additionally, when stacking two quantum field theories, their 't Hooft anomalies and the corresponding topological phases exhibit an Abelian group structure. In this talk, we will explicitly derive this Abelian group law in lower dimensions in fermionic systems with arbitrary symmetry group, offering a deeper insight into the structure of anomalies and fermionic topological phases. This group structure simplifies to known spin bordism result for unitary and direct-product symmetry groups.