Contribution ID: **298** Type: **not specified**

Anomaly Coefficients and Eta Invariants for Quantum Field Theories in Geometric Engineering

Thursday 10 July 2025 11:30 (30 minutes)

In recent years, much progress has been made in understanding the extra-dimensional origin of higher symmetry structures of many quantum field theories (QFTs) obtained via geometric engineering. Among others, our understanding of anomaly structures in QFTs has been significantly improved. Key in these considerations is the asymptotic boundary of the internal dimensions which geometrizes many topological QFT features. Within this context we present explicit results for anomaly coefficients in 5D supersymmetric QFTs that are engineered in M-theory on Calabi-Yau three-folds, and show that eta-invariants of the asymptotic boundary of the engineered geometry determine 1-form self-anomaly coefficients. For isolated orbifold singularities this leads to closed form expressions which in toric cases are checked against intersection computations of resolved geometry. For non-isolated singularities these contributions receive corrections which we make explicit in families of examples.

Presenter: CVETIČ, Mirjam