Contribution ID: **79**   Type: **not specified**

RG-stability of parameter relations in the absence of a conventional symmetry

Tuesday, September 23, 2025 9:00 AM (30 minutes)

We examine a quantum field theory of two real scalars in which a tree-level relation among the squared-mass parameters of the scalar potential is stable under renormalization group (RG) running despite the absence of a conventional symmetry to explain the stability. By complexifying the original scalar field theory, one can identify the symmetry that guarantees the RG-stability of a corresponding relation satisfied by the squared-mass parameters of the complexified theory. We can then show that the RG-stability of the parameter relation of the original theory of two real scalars is a consequence of the structure of the beta functions of the parameters of the complexified theory.

Primary author: HABER, Howard (University of California, Santa Cruz)

Presenter: HABER, Howard (University of California, Santa Cruz)

Session Classification: Plenary 5

Track Classification: Plenary