SEMINAR

DEPARTMENT OF PHYSICS

Path-Integral Fujikawa's Approach to Anomalous Virial Theorems

Carlos Ordonez, University of Houston

Time 4:00 PM
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Room 243, L.H.O. Technology

ABSTRACT

We derive anomalous equations of state for non-relativistic 2D complex bosonic fields with contact interactions, using Fujikawa's path-integral approach to anomalies and scaling arguments. In the process, we derive an anomalous virial theorem for such systems. The methods used are easily generalizable for other 2D systems, including fermionic ones, and of different spatial dimensionality, all of which share a classical SO(2,1) Schrodinger symmetry. The discussion is of a more formal nature and is intended mainly to shed light on the structure of anomalies in 2D manybody systems. The practicality of these ideas rests upon being able to compute in detail the Fujikawa Jacobian that contains the anomaly. This and other technical and conceptual issues and some recent results on the calculation of the Jacobian will be mentioned at the end of the seminar.