

TEP Seminar

Tuesday, September 27 @ 4:00 PM
Physics & Astronomy Building (PAB) 4-330

Studying IR Dynamics with Conformal Truncation

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Any quantum field theory can be thought of as arising from a perturbed UV conformal field theory, suggesting that information about the full RG flow is encoded in the original CFT. I will discuss ongoing work developing new methods for extracting this information to study strongly-coupled IR dynamics. This method uses a UV basis of conformal Casimir eigenstates to construct the Hamiltonian, which is then truncated at some maximum Casimir eigenvalue and diagonalized to approximate the low energy spectrum of the IR theory. After presenting a general framework which can be applied to CFTs in any number of dimensions, I will then focus on the specific example of scalar field theory, which can be used to study strongly-coupled systems like the 2D and 3D Ising models.