
KMI Theory Seminar

“Strongly coupled gauge theories in and out of the conformal window”

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Abstract:

Asymptotically free gauge systems with many fermionic degrees of freedom can develop a conformal infrared fixed point. Near the conformal window these strongly coupled systems can have unusual properties, and might contain a light scalar, a composite candidate for the Higgs boson. Lattice studies are particularly suited to study these strongly coupled models, though methods developed for QCD studies are not always effective. In this talk I will give a brief overview of our understanding of these systems. I will concentrate on two rather different methods, the Dirac operator spectral density, and a variant of finite size scaling, to illustrate the unusual properties of these intriguing systems.