QFT from CFT

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I will discuss a new method for numerically computing dynamical observables in strongly-coupled quantum field theories, which relies on the fact that any QFT can be formulated as a deformation of a UV conformal field theory. This method uses the UV CFT basis of primary operators to construct the full QFT Hamiltonian, which is then truncated and diagonalized numerically to approximate the low energy spectrum and compute nonperturbative dynamical observables. After presenting a general framework which can be applied to QFTs in any number of dimensions, I will then discuss its application to some specific examples in 2D and 3D, as well as recent ideas for applying this framework to gauge theories, including QCD.

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