The Space of Quantum Field Theories

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16:00
Room CE 5

Quantum Field Theory (QFT) is the mathematical language currently used to formulate the fundamental laws of Nature. However, our understanding of it is still incomplete and mostly limited to theories with weakly interacting particles. There is an ongoing effort to develop efficient methods to study QFTs with strong interactions, like for example quantum chromodynamics.

I will describe the Non-perturbative Bootstrap approach, where one constrains the space of QFTs just using basic physical principles like causality, unitarity and Lorentz invariance. Remarkably, this approach can also be used to constrain Quantum Gravity.