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Journey Towards Asymptotically Safe GUT

Tuesday, 9 April 2024 11:00 (30 minutes)

Solving QFT is key to a more profound understanding of present and next generation of theories of Nature. The large number-of-flavour 1/Nf expansion has been a useful tool to go beyond Feynman diagrammatic computations. In this talk, I will discuss not only the theoretical perspectives of this method but, in particular, also its important applications in particle physics phenomenology. I will show that by using the large number-of-flavour 1/Nf summation techniques, the Standard Model can achieve an interacting ultraviolet fixed point to be asymptotically safe, addressing the famous UV Landau Pole problem. We have also applied this method to Grand Unified Theory to explore the safety of Pati-Salam model and Trinification model.

Presenter: Prof. WANG, Zhi-Wei (UESTC)

Session Classification: Plenary