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Large quantum number expansion in O(2N) vector model and Resurgence

Thursday, 2 September 2021 17:30 (30 minutes)

In this talk I will discuss the O(2N) model at criticality in three dimensions in the limit where the charge Q and N are taken to be large. The large-charge expansion turns out to be an asymptotic series and resurgent methods can be applied to obtain an unambiguous semi-classical reconstruction of this expansion. It contains non-perturbative corrections and it allows to extend the validity of the EFT to any value of the charge. Otherwise, this reconstruction can be emanated from a saddle point expansion of worldline path integrals for free particles moving on spheres.

Presenter: KALOGERAKIS, Ioannis (University of Bern)