

Resummation of perturbative series and Resurgence in quantum field theory II

Wednesday, 15 July 2020 11:00 (1 hour)

Perturbative series in Quantum Field Theory (QFT) is typically divergent. While there is a standard way to resum divergent series called Borel resummation, it is expected that naive Borel resummation does not work in many QFTs including QCD. Resurgence is often used to cure this kind of situation both in physics and mathematics. In my lecture, I will begin with general expectation on perturbative series in QFT and introduce resurgence with some simple examples. Then I will explain recent attempts to apply resurgence to QFT. Although it is natural to ask whether one can apply resurgence to some realistic theories such as QCD, I do not have a clear answer to the question at this moment because we do not have sufficient data yet. Instead I will discuss what should be done or known to answer the question.

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