Contribution ID: **26** Type: **not specified**

Large-order behaviours in CFTs and Resurgence

Monday 4 July 2022 11:00 (30 minutes)

The conformal data of CFTs involving heavy charged operators can be organised as a series in inverse powers of the global charges involved. When extrapolating these expansions to light low-charge sectors, it is relevant to ask whether these series are divergent and Borel-summable. In this talk, I will show that, generically, one would expect large-charge expansions to be divergent faster than factorial. Moreover, In scalar large-N CFTs one finds series which are not Borel-summable with non-perturbative ambiguities cured by Worldline instantons. These are discussed using Resurgence methods and shown to have an exact semi-classical expansion. The talk is based on arXiv:2102.12488.

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