

Bootstrapping the UV from the IR via Double Copy Consistency

Monday 11 December 2023 11:15 (30 minutes)

Traditionally the double copy is praised for efficient construction of gravitational S-matrix elements at high orders in perturbation theory, by way of simpler gauge theory building blocks. In this talk, we will find that color-kinematics duality can also be used to inform UV completion of effective field theories (EFTs). In our approach, UV information about gauge/gravity EFTs can be recovered from double-copy consistency conditions between the IR Wilson coefficients. Guided by this insight, we'll see that many properties historically understood to have a UV origin, can actually be inferred directly from the IR principle of double-copy consistency. To close, we'll see that spectra of UV massive modes consistent with these constraints can be recovered using Padé extrapolation, a standard method in the resurgence literature.

Author: PAVAO, Nic (Northwestern University)

Presenter: PAVAO, Nic (Northwestern University)

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