Institut Henri Poincaré

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String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 15 Fevrier 2018, 10:00

Jacob Bourjaily

NBI Copenhagen

Improving Integrands and Integrals for Amplitudes

There have been enormous advances in both our ability to represent scattering amplitudes at the integrand-level (for an increasingly wide variety of quantum field theories), and also in our integration technology (and our understanding of the functions that result). In this talk, I review both sides of these recent developments. At the integrand-level, I describe the "prescriptive" refinement of generalized unitarity, and show how closed, integrand-level formulae can be given for all leading-weight contributions to any amplitude in any quantum field theory. Regarding integration, I describe some new results that could be summarized as "dual-conformal sufficiency" : that all planar, ultraviolet-finite integrands can be regulated and computed directly in terms of manifestly dual-conformal integrals. I illustrate the power of having such representations, and discuss the role played by a (conjectural) cluster-algebraic structure for kinematic dependence.

Institut Henri Poincaré, salle 314, 3ème étage

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