

Holonomic Techniques for Feynman Integrals



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Positive geometries and canonical forms via mixed Hodge theory

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Prompted by Arkani-Hamed and Trnka's discovery of the amplituhedra, the concept of positive geometry recently emerged as an important tool in the study of scattering amplitudes and related quantities in physics. Roughly speaking, a positive geometry is a semi-algebraic domain whose boundary structure matches the residue structure of a unique logarithmic form, called its canonical form. The goal of this talk is to recast these notions as natural byproducts of Deligne's mixed Hodge theory, a central organizing principle in complex algebraic geometry which is intimately linked to the study of logarithmic forms and their residues. This is joint work with Francis Brown.

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