



HIGH ENERGY THEORY SEMINAR SERIES

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Projective geometry of scattering amplitudes

I will introduce a technique in studying the analytic structure of perturbative S-matrix of QFTs. The main idea is to associate Feynman integrals to objects in a projective space: polytopes and hypersurfaces. At one loop, this reveals a universal structure for all possible Feynman integrals (in particular, including one-loop amplitudes in any QFTs), and gives rise to two simple algebraic algorithms to determine the integrals (as functions of the kinematics). I will also comment on the generalization to higher loop levels.



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