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Analytic Evaluation of Multiple Mellin-Barnes Integrals

Tuesday 16 April 2024 18:00 (30 minutes)

I will discuss a novel approach based on the triangulation of point configurations to evaluate higher-fold Mellin-Barnes (MB) integrals in terms of hypergeometric functions. I will show that this new approach is computationally more efficient than the existing conic hull approach to evaluate MB integrals. As an application of this triangulation approach, I will first present new, simpler hypergeometric solutions of the conformal two-loop double box and one-loop hexagon Feynman integrals. Furthermore, using MB integrals, I will present new convergent series solutions of multiple polylogarithms commonly appearing in Feynman integral calculus.

Primary authors: BANIK, Sumit (University of Zurich & Paul Scherrer Institut);   FRIOT, Samuel (Universite Paris-Saclay)

Presenter: BANIK, Sumit (University of Zurich & Paul Scherrer Institut)

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