

# Towards Analytic Structure of Feynman Parameter Integrals with Rational Curves

*Tuesday, 23 August 2022 16:00 (30 minutes)*

We propose a strategy to study the analytic structure of Feynman parameter integrals where singularities of the integrand consist of rational irreducible components. At the core of this strategy is the identification of a selected stratum of discontinuities induced from the integral, together with a geometric method for computing their singularities on the principal sheet. For integrals that yield multiple polylogarithms we expect the data collected in this strategy to be sufficient for the construction of their symbols. We motivate this analysis by the Aomoto polylogarithms, and further check its validity and illustrate technical details using examples with quadric integrand singularities (which the one-loop Feynman integrals belong to). Generalizations to higher-loop integrals are commented at the end.

## Summary

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**Session Classification:** Plenary 丁