

Tensor Reduction for high-rank multi-loop Integrals

Thursday, 12 September 2024 11:50 (25 minutes)

A vital step in multi-loop Feynman integral calculations is tensor reduction. We present an efficient graphical approach to this problem and introduce OPITeR a code that implements this method for arbitrary tensor Feynman integrals. OPITeR can handle integrals of arbitrary loop up to tensor rank 20 with any number of spin indices. We present some applications in the context of R^* renormalization calculations as well as asymptotic / subgraph expansions in momentum space, where high-rank tensors are frequently encountered.

Primary author: TEALE, Sam (University of Edinburgh)

Co-authors: HERZOG, Franz; GOODE, Jae (University of Edinburgh)

Presenter: TEALE, Sam (University of Edinburgh)

Session Classification: Methods for amplitudes and integrals

Track Classification: Methods for amplitudes and integrals