



Contribution ID: 17

Type: **not specified**

Evaluating Feynman integrals using Mellin-Barnes representations

Wednesday 24 April 2013 15:00 (30 minutes)

Summary

Recently, Mellin-Barnes (MB) representations of Feynman integrals have been used extensively in various phenomenological and theoretical studies of quantum field theory. With AMBRE, we deliver a Mathematica tool for the derivation of MB-integrals and their subsequent analytic continuation and numerical evaluation.

The Mathematica toolkit AMBRE derives MB representations for Feynman integrals in $d = 4 - 2\epsilon$ dimensions. It may be applied for tadpoles as well

as for multi-leg multi-loop scalar and tensor integrals. AMBRE uses a loop-by-loop approach and aims at lowest dimensions of the final MB representations. The present version of AMBRE works fine for planar Feynman diagrams.

Now we would like to present a possible extension of the AMBRE package to diagrams with non-planar topology. The proposed algorithm covers two- and three-loops massless cases and in general gives lowest dimensions of the final MB representations than loop-by-loop approach in current version of AMBRE.

Presenter: DUBOVYK, Ievgen