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Toolbox for multiloop Feynman diagram calculations using R* operation

Tuesday 2 September 2014 08:00 (1 hour)

We present the set of tools for computations on Feynman diagrams. Various package modules implement:

- graph manipulation, serialization, symmetries and automorphisms
- calculators, which are used to calculate integrals by particular methods (analytical or numerical).
- UV-counterterms calculation using IR-rearrangement and R* operation (minimal subtraction scheme)

The following calculators are available out of the box: reduction to master integrals (using LiteRed IPB and DRR rules), sector decomposition and the Gegenbauer polynomial x-space technique. These set of calculators can be extended by creating your own Feynman diagrams calculators using API provided. Library implemented in python (>=2.6 compatibility) and uses GiNAC as computer algebra engine.

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