



Contribution ID: 64

Type: **Poster**

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.

Primary authors: Mr DMITRY, Batkovich (St. Petersburg State University (RU)); Prof. ADZHEMYAN, Loran (St. Petersburg State University (RU)); KOMPANIETS, Mikhail (St. Petersburg State University (RU)); Dr KIRIENKO, Yury (St. Petersburg State University (RU))

Presenters: Mr DMITRY, Batkovich (St. Petersburg State University (RU)); KOMPANIETS, Mikhail (St. Petersburg State University (RU))

Session Classification: Poster session

Track Classification: Computations in Theoretical Physics: Techniques and Methods