

LanHEP package

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LanHEP: A Package for automatic generation of Feynman rules in gauge models, hep-ph/9608488

LanHEP is a powerful tool for automatically generating Feynman rules directly from a model's Lagrangian, written in a compact and intuitive form similar to that used in publications.

Key Features

- Writes your Lagrangian in a clean and readable format.
- Automatically obtains Feynman rules in terms of physical fields and independent parameters.
- Supports summation over indices and recognises commonly used expressions such as covariant derivatives and gauge field strength tensors
- Export models in LaTeX, CompHEP, CalcHEP, UFO, and FeynArts formats
- Supports all class of models with particles upto spin 2 making it a key tool for BSM studies
- **Simple and User-Friendly Setup**
 - Requires only a C compiler (e.g. gcc) to build
 - You don't need to know the C language — LanHEP uses its own intuitive input format.

Many advanced features

- Supports superpotential formalism
- Checks: BRST invariance, electric charge conservation, hermiticity
- Supports multiplets, matrices and much more — see the manual and this lecture

LanHEP Installation Guide

1. Download the code

a) from Dark Tools github

`wget https://raw.githubusercontent.com/dimauiromattia/darktools/main/lanhep/lanhep403.tgz`

or

b) from the **HEP Tools site**

→ Go to HEP TOOLS → lanhep → download lhep403.tgz

2. Unpack the archive

`tar -zxvf lhep403.tgz`

3. Enter the directory

`cd lanhep403`

4. Compile

`make`

*The **lhep** executable will be built — you can add it to your PATH for easy use, e.g. add `export PATH="$PATH:/path-to-lhep-file/"` line to .bashrc*

ex#1 *install LanHEP*