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://github.com/dimauromattia/darktools/blob/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*