MG5aMC tutorial; requirements

- Laptop PC (with internet connection)
- Terminal (for shell operation)
- Basic knowledge of shell commands;
  e.g. pwd, mkdir, cd, cp, mv, rm, tar, less, more, …
- python 2.6 or 2.7 / python3 from v2.8.0
- gfortran/gcc 4.6 or higher
- matplotlib (or ROOT) [for MadAnalysis5]

MG5aMC; start-up

- Download MG5_aMC_vX.Y.Z.tar.gz from the MadGraph5_aMC@NLO launchpad: https://launchpad.net/mg5amcnlo
- At your working directory in a terminal, untar:
  $ tar zxvf MG5_aMC_vX.Y.Z.tar.gz
- Go into the MG5aMC directory:
  $ cd MG5_aMC_vX_Y_Z/
- Start MG5aMC:
  $ ./bin/mg5_aMC

MG5aMC; install other tools

- For plots:
  MG5_aMC> install MadAnalysis5
- For parton-shower and hadronization:
  MG5_aMC> install pythia8
- For detector simulation:
  MG5_aMC> install Delphes
- For NLO calculations:
  MG5_aMC> install looptools

MG5aMC; main 4 steps

- MG5_aMC> import model MODEL (e.g. 2HDM)
- MG5_aMC> generate PROCESS (e.g. p p > t t~)
- MG5_aMC> output (myprocess)
- MG5_aMC> launch
- MG5_aMC> launch
- MG5_aMC> ...

MG5aMC; tips

- Use auto-completion by "tab (tab)".
- MG5_aMC> help
- MG5_aMC> help COMMAND (e.g. generate)
- MG5_aMC> tutorial

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...tions Answers

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...M phenomenology, such as
...e generation of hard events
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...package (see the right of this page)

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Downloads

Latest version is 2.6.x

MG5_aMC_v2.6.7.tar.gz

MG5aMC_3.0.1_beta.tar.gz

released on 2017-08-15

All downloads

Announcements

answers.launchpad.net

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Change your preferred languages to modify the list of languages available for writing the question.

Language:

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The language in which this question is written. The languages marked with a star (*) are the languages spoken by at least one answer contact in the community.

Summary:

A one-line summary of the issue or problem.

Continue or Cancel

One can directly communicate with the developers via Launchpad (ask questions, report bugs, etc).

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https://launchpad.net/mg5amcnlo

EX-1; change parameters

- Semi-leptonic decays in top-pair production at the LHC:
  MG5_aMC> generate p p > t t~, t > b l- vl~, t~ > b~ j j
- How can we change?
  - top mass
  - top width
  - W mass
  - beam energy
  - pT cut on leptons

EX-2; process generation (coupling order)

- What is the difference?

1. > generate p p > t t~
2. > generate p p > t t~ QCD=0
3. > generate p p > t t~ QED=0
4. > generate p p > t t~ QED<=99

- Compare the cross sections.