

Software Requirements and Installation Instructions for the Monte Carlo Tutorial I

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The tutorial will consist of two parts: generating events using *MadGraph/MadEvent v5* package, and analyzing them using a simple *Mathematica*-based routine. We will need the following software:

Mathematica: version 7 or higher (student version is OK). I strongly recommend having a copy installed on your laptop. Running Mathematica at a remote location (e.g. at your home institution) may be challenging due to limited internet bandwidth available at Cargese and a large size of the event file that will need to be transferred.

MadGraph/MadEvent: installation process will depend on your platform.

Install on Linux:

python 2.6/2.7: MadGraph 5 requires python 2.6 or python 2.7. In order to check your version of python, you can type: `python -version`. Some of the repositories are still on python 2.5. So if updating python via your repository manager didn't work, you can download directly python from the following link: <http://www.python.org/download/> and follow instructions.

Madgraph5: You will find madgraph5 package on the following page: <https://launchpad.net/madgraph5>. For this program, you just need to untar it. To check if mg5 is correctly installed, run it by typing: `./bin/mg5`. If you don't have a valid python version, it will fail.

Install on MacOs:

perl

bash Those programs are by default present in any Mac distribution, but just in case you should check that they are all installed in your computer (by typing `perl -version`).

gmake By default, makefile is not installed on mac. In order to check, you can type `make --version`. If it responds: “-bash: make: command not found”, then you need to install it. The easiest is to install the xcode.

For MacOs 10.5: <https://connect.apple.com/cgi-bin/WebObjects/MemberSite.woa/wa/getSoftware?bundleID=20414>

For MacOs 10.6: <http://connect.apple.com/cgi-bin/WebObjects/MemberSite.woa/wa/getSoftware?bundleID=20792>

For MacOs 10.7:

<http://itunes.apple.com/us/app/xcode/id448457090?mt=12>

In order to be able to download it, you will need to set up an Apple developer account (which is free).

gfortran 4.x (To check the version, type: `gfortran -version`)
This program is often not included in standard mac version. You can download it from:

<http://prdownloads.sourceforge.net/hpc/gcc-lion.tar.gz?download> for MacOs 10.7

<http://prdownloads.sourceforge.net/hpc/gcc-snwleo-intel-bin.tar.gz?download> for MacOs 10.6

<http://sourceforge.net/projects/hpc/files/hpc/gcc/gcc-leopard-intel-bin.tar.gz/download> for MacOs 10.5

Python: The default python version of MacOs 10.6 is python 2.6 and is (almost always) fully working with Madgraph5, so nothing to install for you. The python version of MacOs 10.7 is python 2.7. And this one works perfectly, so nothing to install for you. For other version of MacOS, you will need to install python2.7 from the python web site: <http://www.python.org/download/>

Madgraph5: You will find madgraph5 package on the following page: <https://launchpad.net/madgraph5>. For this program, you just need to untar it. To check if mg5 is correctly installed, run it by typing: `./bin/mg5`. If you don't have a valid python version, it will fail.

Install on Windows ¶

MadGraph/MadEvent is designed to run on Linux/Mac. If you don't have Linux or Mac, the best solution is to install Linux (I would advice to install Ubuntu) in dual boot and follow the instructions for Linux. This video might help you to do so:

<http://video.google.com/videoplay?docid=2369893842637434537>