

In Anticipation of the LHC

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Outline

- Original assignment: “perspective of a theorist in CMS”
 - Not at liberty to discuss CMS stuff in public
 - Defer all questions to the other CMS theorist on the panel (H. Baer)
- New topic: **what should theorists be doing in anticipation of the LHC?**
- The LHC experiments will take data and compare to theory. Naturally you would like to understand:
 1. How LHC experiments take data. Problems:
 - They probably won’t tell you (everything).
 - Not very interesting for a theorist.
 - Fortran won’t get you very far.
 2. What is the theory that is being compared to.
 - This is your big opportunity: learn and get involved in developing MC tools!



MC Tools Resources

- Check out the repository <http://www.ippp.dur.ac.uk/montecarlo/BSM/>
 - Are you familiar with the main programs? (see next item)
- Learn how to use them (Incomplete) list of resources:
 - Video lectures on “MC Generators for LHC”, T. Sjostrand
<http://agenda.cern.ch/fullAgenda.php?ida=a042790>
 - Lectures on PYTHIA
http://www-cdf.fnal.gov/physics/lectures/pythia_Dec2004.html
 - Lectures on HERWIG
http://www-cdf.fnal.gov/physics/lectures/herwig_Oct2004.html
 - Practicum on Simulations (PYTHIA and CompHEP self-test assignments),
2005 Princeton Summer School
<http://www.phys.ufl.edu/~matchev/pitp/>



MC Tools Resources - continued

- Get involved in their development: attend workshops, look at talks
 - MC4BSM workshop, Fermilab, March 20-21 2006
<http://theory.fnal.gov/mc4bsm/index.html>
 - Tools for SUSY and New Physics, Annecy, June 26-28, 2006
<http://lappweb.in2p3.fr/TOOLS2006>
 - MC4BSM-II, University of Florida, exact dates TBA (winter 2006-07)
- Provide feedback on the “Physics tools for the LHC” forum (courtesy M. Schwartz)
<http://www-theory.lbl.gov/tools/>
- Final words of advice (since people often get us confused with Florida State)
 - If attending MC4BSM-II workshop, book tickets to Gainesville, not Tallahassee.
 - If applying for a job in our group, send application to Gainesville, not Tallahassee.
 - When in doubt, always remember: the University of Florida is the one with the 2006 Men’s Basketball National Championship.

