DESY

Physics Seminar

The Higgs boson in the fermionic decay channels at the LHC.

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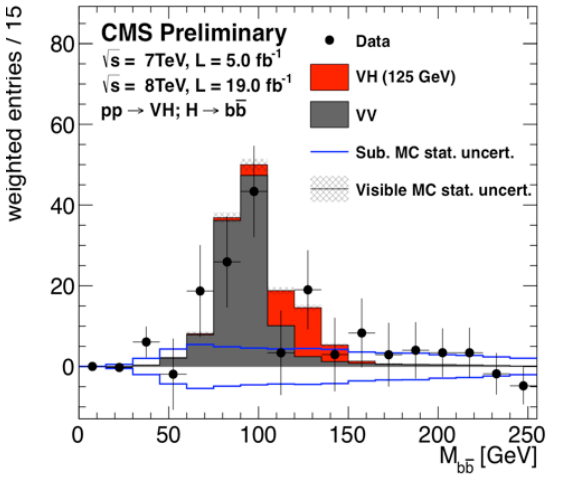
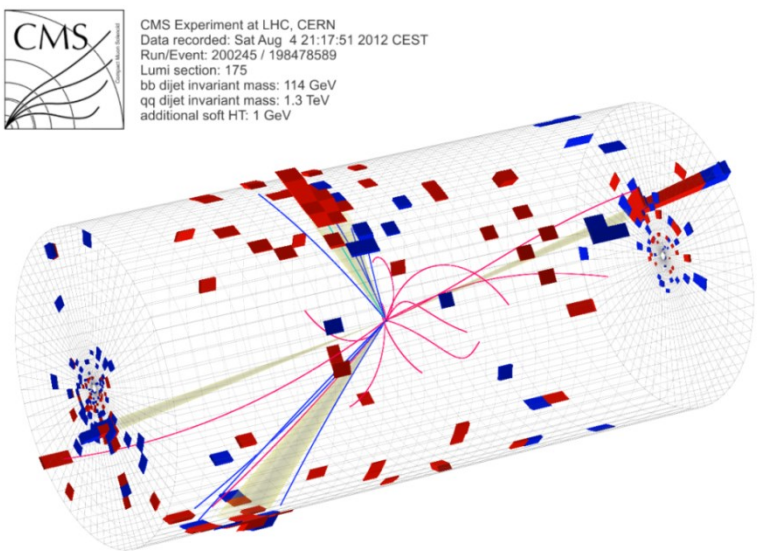


Tuesday, 28 January 2014
16:45 h, Auditorium

The recent discovery of the Higgs boson was mostly driven by the measurement in the bosonic decay modes of the Higgs (ZZ, WW, $\gamma\gamma$), but many other measurements are being performed at the LHC for this new particle. With the measured Higgs boson mass around 125 GeV, sizable branching ratios are expected also for fermions (in particular bottom, tau, charm and muons), resulting in many different final states to be studied.

A particularly interesting decay mode is H→bb, which is expected to have the largest branching ratio: about one out of two Higgs bosons produced decay to a b-pair. This decay mode is studied in Standard Model processes with associated production of electroweak bosons, forward quarks or top quarks, as well as in supersymmetric or exotic scenarios. The decay into tau pairs also has a relatively large branching ratio and the additional advantage of more easily manageable background compared to H→bb. In this seminar the results of the Higgs measurements in the fermionic final state with the CMS experiment at the LHC will be presented and main ideas for other ongoing or future measurements will be discussed.



Coffee, tea and cookies will be served at 16:30h

After the seminar there is a chance for private discussions with the speaker over wine and pretzels

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