

# CP, Electroweak Model, QCD and Cross Sections

Wei-Ming Yao(LBNL)

PDG Advisory Meeting, CERN, Oct. 11, 2008

- Electroweak Model and Constraints on New Physics (Rev) – J. Erler(U. Mexico) and P. Langacker (U. Penn)
- Quantum Chromodynamics (not updated) – I. Hinchliffe (LBNL)
- Cross-Section Formula for Specific Processes (SUSY Part new) – R. Cahn(LBNL) and H. Baer (Oklahoma)
- CP Violation in Meson Decays (Rev) – D. Kirkby (UC Irvine) and Y. Nir(Weizmann Inst.)

Overseers:

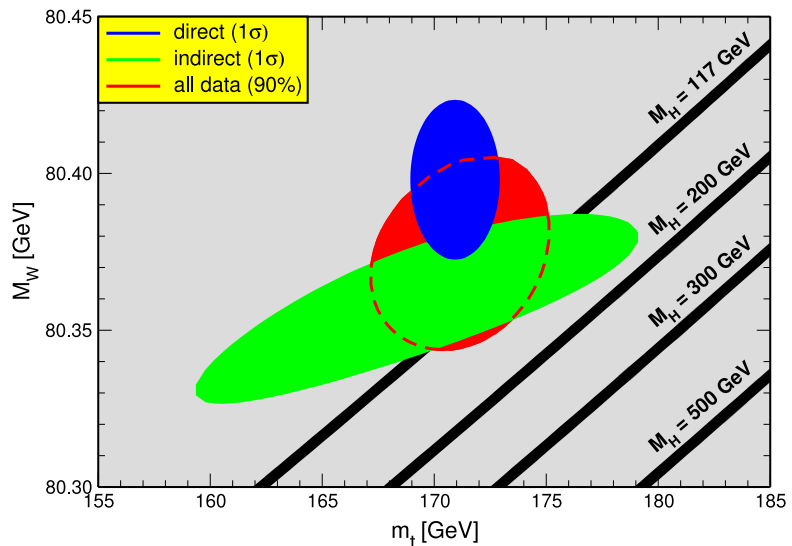
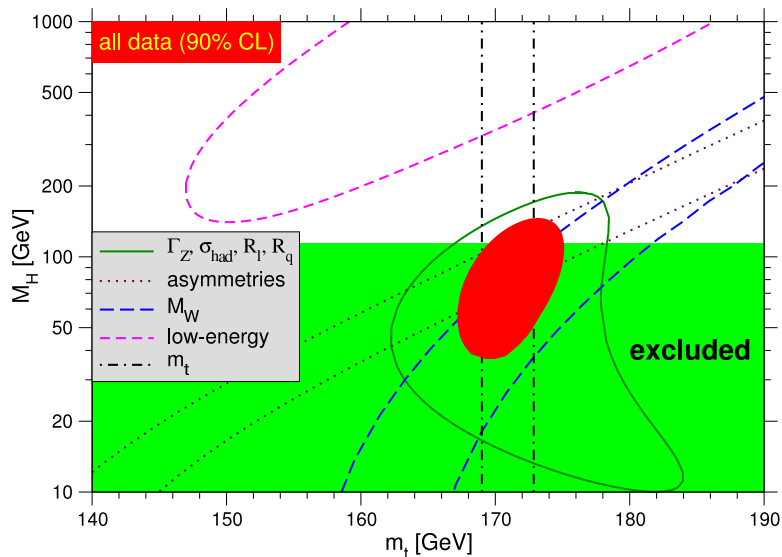
M. Barnett and W.-M. Yao

## General Remarks

- These are important reviews and have been with RPP for many editions
- Authors have done an excellent job to keep the content current.
- All reviews are sent out to a few referees for comments for every edition.
- The refereeing is an open process where the names of the referees are known to the authors and direct correspondence is encouraged.
- QCD did not get updated this time and we are looking for new set of authors to replace Ian.

# Electroweak Model and Constrains on New Physics

- There were not many changes since last edition.
- It covers extensively on: Renormalization and radiative corrections, Cross-section and asymmetry formulas, Precision flavor physics,  $W$  and  $Z$  decays, Experimental results, and Constrains on new physics.
- $M_H = 77^{+28}_{-22} \text{ GeV}/c^2$  or  $114.4 < M_H < 161 \text{ GeV}/c^2$  at 95% C.L.



# Quantum Chromodynamics

- Unfortunately, we did not get a chance to update for this edition.
- After talking with Ian and other QCD experts, here are possible names for new QCD review authors, but no official word on that yet.
  - Gavin Salam, professor at LPTHE, jet expert, very well organized, he is in charge of the Les Houches QCD/Jet group
  - Markus Wobisch, professor at Louisiana Tech. worked on QCD physics at D0 and LHC, co-convener for Les Houches and D0 QCD group.
- The scope of the review will be determined by the new authors, but focus on some basics at graduate level, and discussions of both theoretical and experiment issues that are important for LHC physics.

# Cross-Section Formula for Specific Processes

- Following the PDG advisory committee's recommendation, we have implemented second part of review: Processes Beyond the Standard Model.
- The new processes added by Howard are: production of supersymmetric particles (gluino, squarks, sleptons, sneutrino, chargino, and neutralino); universal extra dimensions, large extra dimensions, and warped extra dimensions.
- If luck, some of these new processes will be discovered soon at LHC.