

Figure 1: the scenery of e^+e^- collisions as a function of energy. LEP1 was “sitting” on the huge Z^0 resonance. Beauty factories exploit the $\Upsilon(4S)$ resonance located in the family of Υ beauty-antibeauty resonances near 10 GeV. The J/Υ is the lowest charm quark-antiquark bound state near 3 GeV.

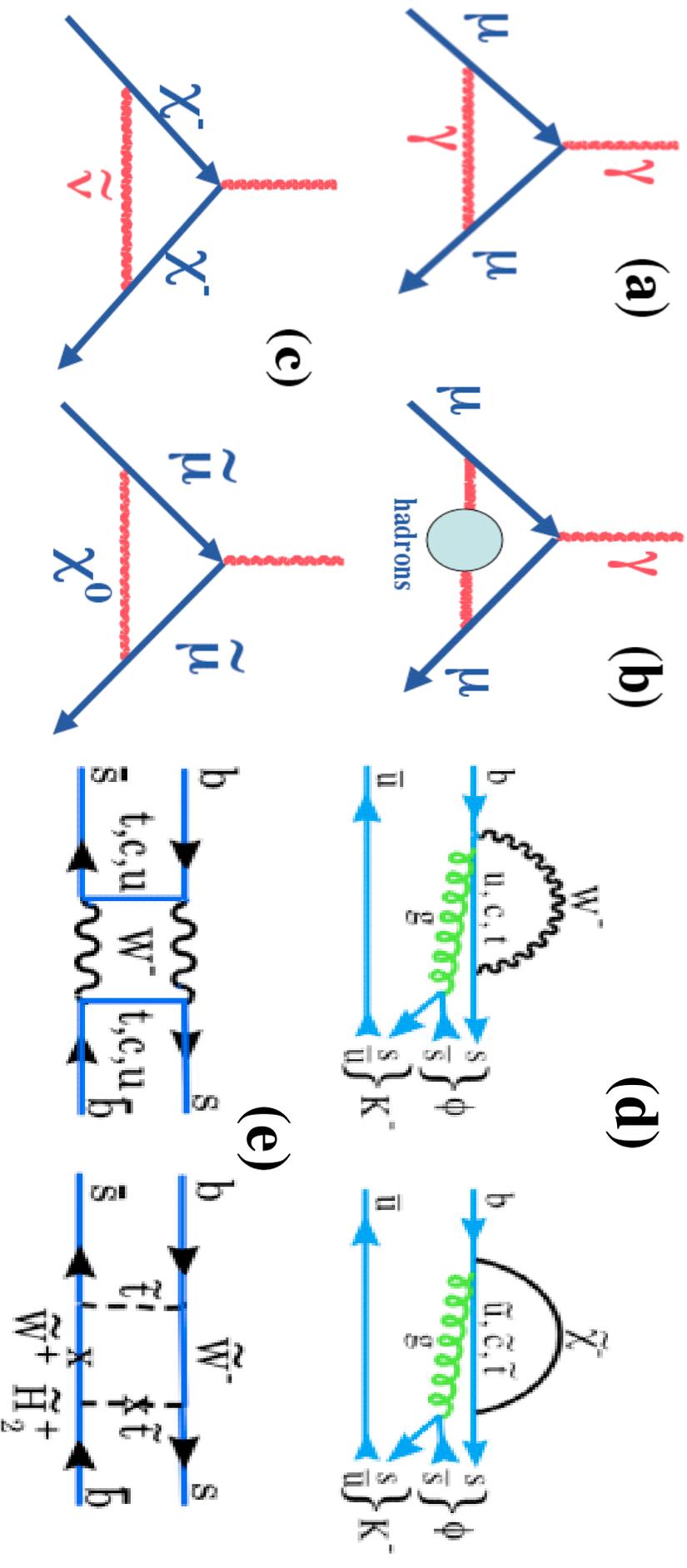


Figure 2 Examples of loop diagrams

- (a) The lowest order diagram contributing to $g-2$
- (b) the hadronic contribution to $g-2$
- (c) SUSY particles in the loops as a possible contribution to $g-2$
- (d) penguin diagrams (SM and SUSY) contributing to one B decay mode. The resemblance to a penguin is a matter of taste..
- (e) the box diagrams responsible for beauty-antibeaauty oscillation

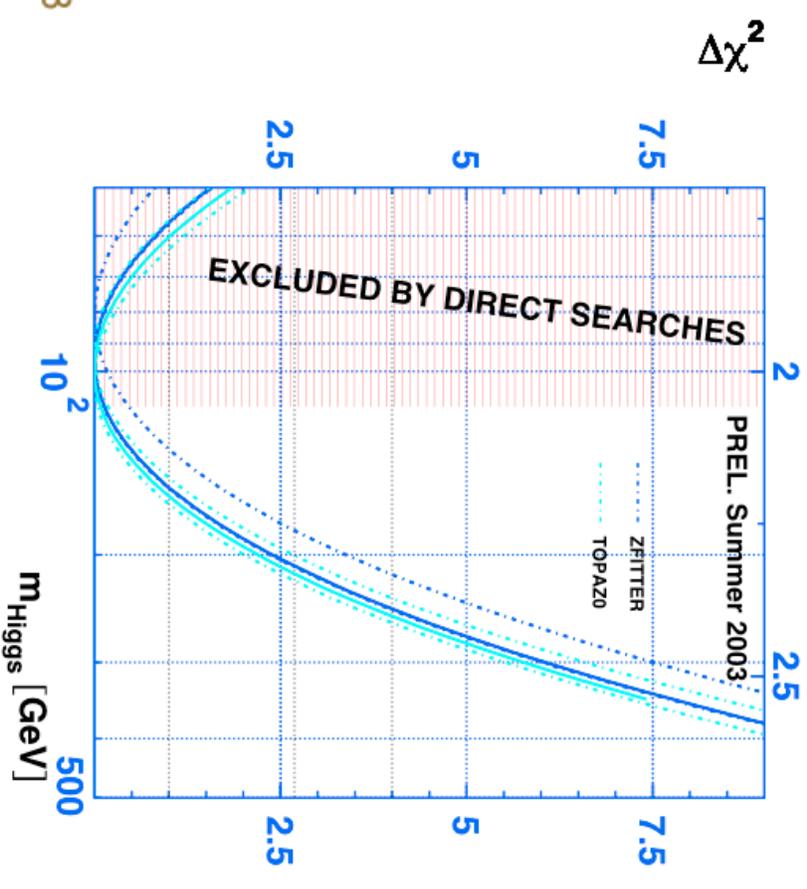
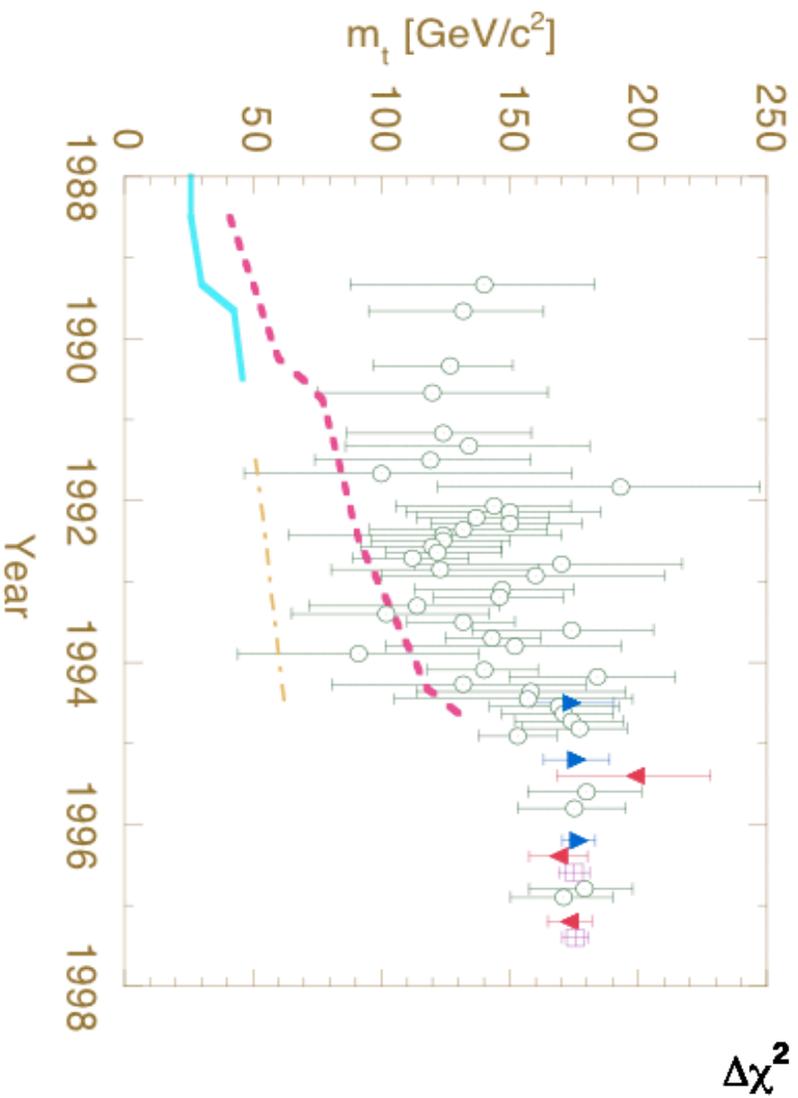


Figure 3 -- left: the top mass from indirect LEP measurements (open circles) and from the direct Tevatron measurements (color triangles) right: the preferred region for the SM Higgs mass (near the bottom of the χ^2 curve) deduced from electroweak measurements.

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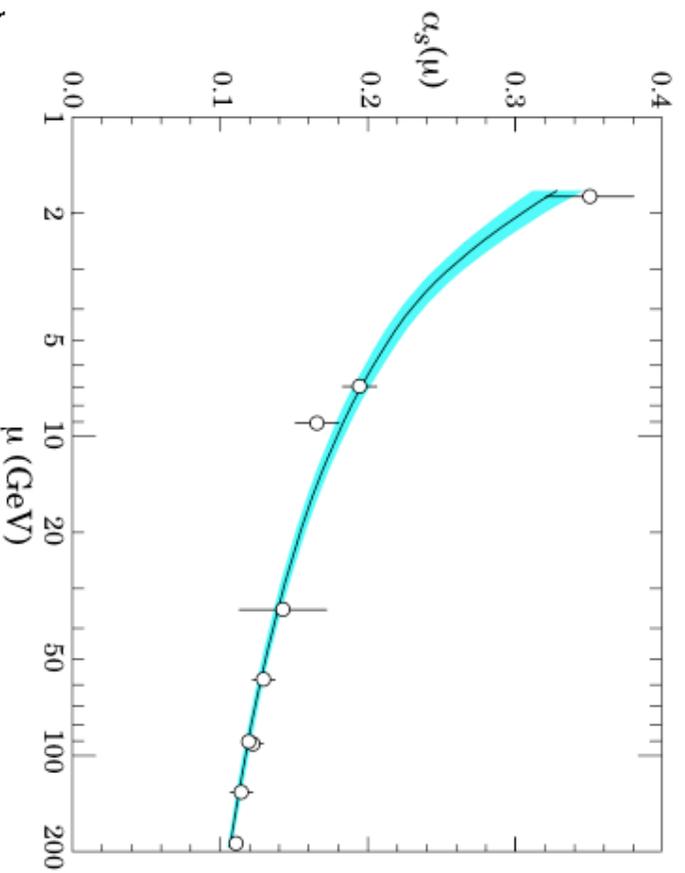
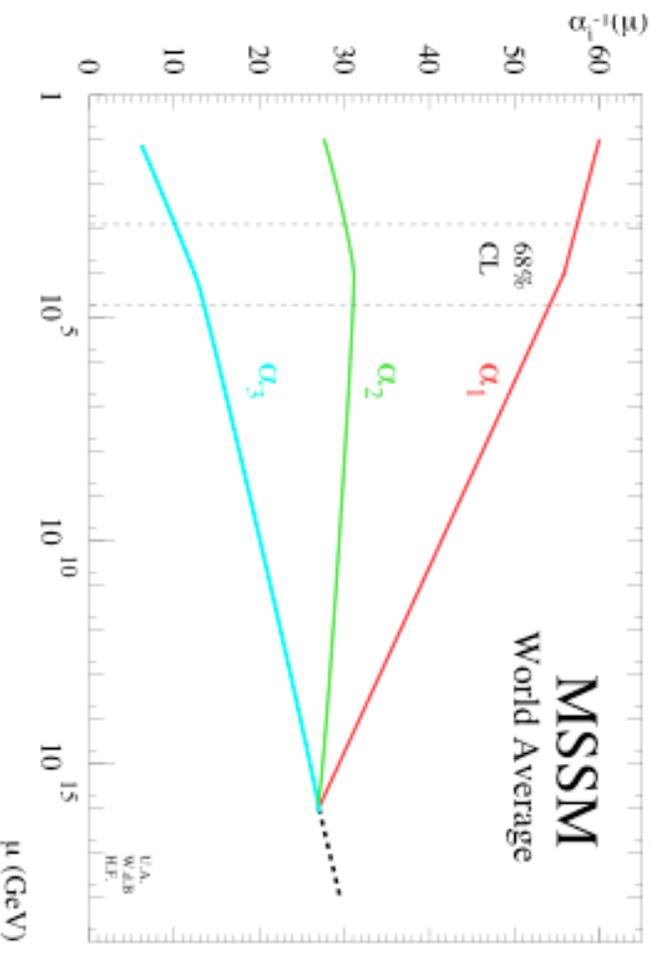
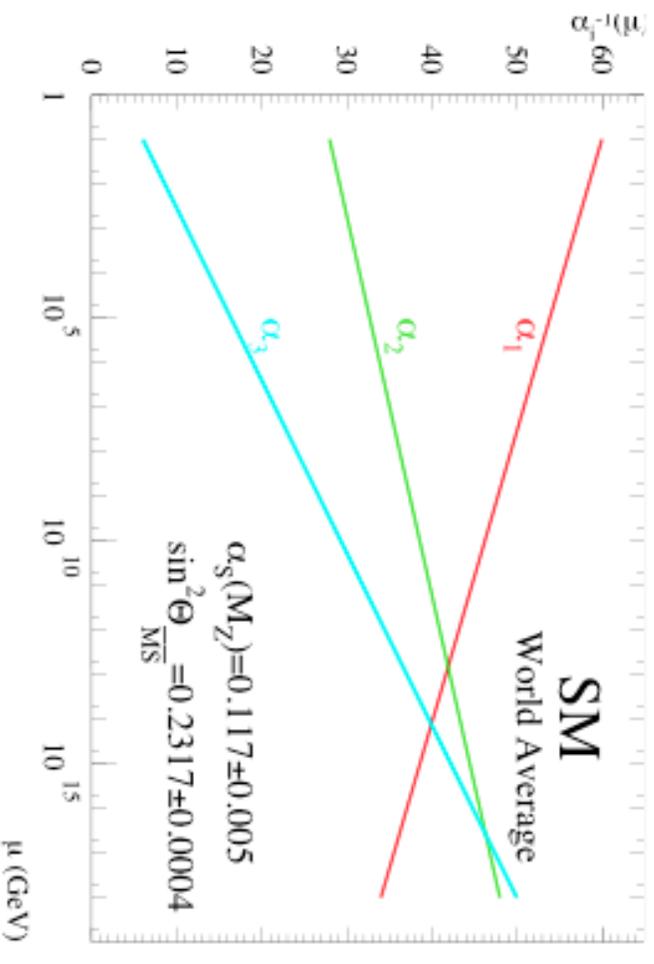


Figure 4 -- left: the evolution of the strong coupling constant with the energy scale

right: the convergence of the SM coupling constants, approximate in the SM (upper figure), exact in SUSY (lower figure).

One should distinguish this smooth running of couplings from the evolution of the intensity of the interaction with the energy scale, depending on the mass of the exchanged boson.



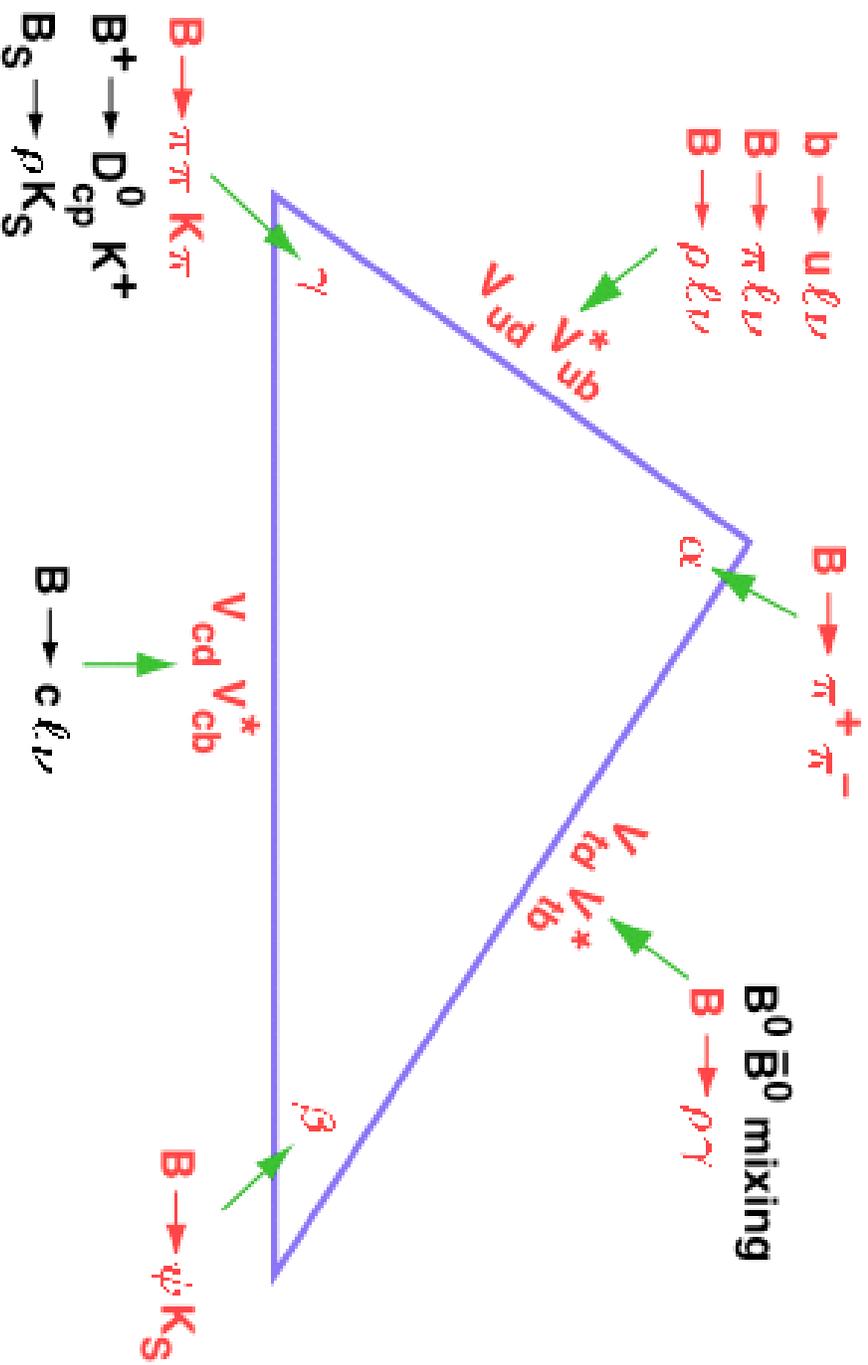


Figure 5: the “d-b” Unitary Triangle. Adding to zero three complex numbers like $V_{ud} V_{ub}^*$, etc.. naturally lead to draw a triangle. We indicate which B decay modes give access to its sides. V_{ij} is the element of the CKM matrix connecting the flavour eigenstate quark i to the mass eigenstate quark j .

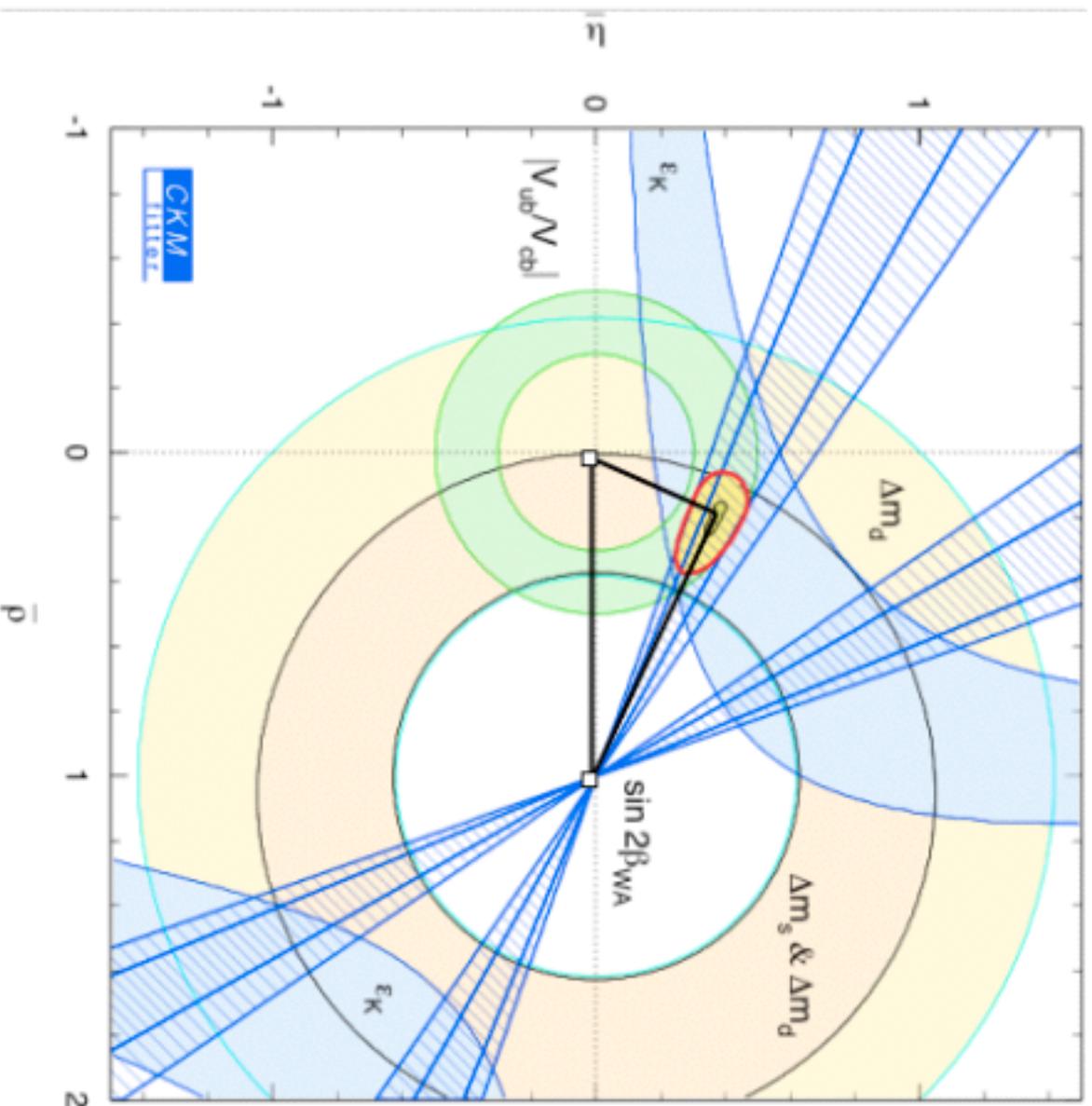


Figure 6: the tip (yellow) of the Unitary Triangle as determined from LEP, K physics, etc. The blue cones give the value of its angle \sphericalangle directly measured at B Factories.