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Addendum to Minimal Dynamical Symmetry Breaking of the Standard Model

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CDF at Fermilab and Mark II at the SLC have recently announced precision measurements of the the Z mass consistent with a combined value of 91.0 \pm 0.2. This significantly affects the standard limits on the mass of the top quark obtained by comparing all experiments, principally including neutrino deep-inelastic scattering (ν -DIS), to the radiatively corrected definition, $\sin^2\theta_W = A^2/M_W^2(1-\Delta r)$, combined with the direct definition, $\sin^2\theta_W = 1 - M_W^2/M_Z^2$.

These changes are reflected in the accompanying modified versions of Figs.(6) and (7) of our preprint FERMILAB-PUB-89/127-T. Fig.(6) now shows the highly constrained allowed region at the 90% confidence level for m_{top} and $\sin^2\theta_W$ when: (a) the ν -DIS is treated as in Amaldi et al., (Phys. Rev. D36, 1385 (1987)) with $m_c = 1.5 \pm 0.3$ GeV; (b) ν -DIS is parameterized with $m_c = 1.3 \pm 0.5$ GeV; (c) ν -DIS is ignored completely in the comparison. The data is presented in Fig.(7) with the new precise determination of M_Z reflected in the box on the rhs.

Should future determinations favor smaller values of $\sin^2 \theta_W$, then a heavy top quark is indicated, as proposed in the minimal dynamical breaking scheme.



