Introduction to Composite Higgs Scenarios

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Fit of Higgs couplings

Current fit of Higgs couplings to gauge boson and fermions

- ★ assumption
 - same coupling to t and b

$$k_b = k_t = k_F$$

- bounds
 - MCHM₄

 $\xi < 0.12$ at 95%CL

• MCHM₅

 $\xi < 0.10 \quad \text{at } 95\% \text{CL}$



Production of top partners

- + pair production
 - universal
 - large at low masses
- single production
 - depends on $V_{\mu}\bar{q}\gamma^{\mu}\Psi$ vertex
 - dominates at high masses



Bounds on top partners

Bounds on charge 2/3 states from **pair** production



Bounds on top partners

Bounds on charge 5/3 states from **pair** production



Bounds on top partners

Bounds on charge 2/3 states from single production



Bounds on vector resonances

8 TeV LHC bounds



Future collider reach



+ collider searches complementary to precision measurements