

High Energy Physics - Phenomenology

A Higgs Test of Horizontal Symmetry

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Identical interactions found in the three families of quarks and leptons suggest the presence of a horizontal symmetry. We discuss how such a symmetry can be tested by measuring the decay rates of Higgs into fermion pairs, and the Higgs production cross section. Depending on the details, there is a chance that the decay widths to the bottom-pair and the tau-pair may be down by more than a factor of 3 or more compared to the usual values, and the fusion production cross section of the Higgs also altered. Whatever the outcome, such a test also serves to constraint horizontal symmetry models.

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