

Vector Portals to the Twin Sector

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The twin Higgs scenario protects the Higgs mass from large quantum corrections through symmetry partners without standard model (SM) color charge. The particles belong to a “twin” sector, related to the SM by a discrete exchange symmetry. The gauge symmetries in each sector forbid all but a few renormalizable connections between the sectors. Vectors portals, either through twin particles or singletons (which have no twin under the discrete symmetry), allow the twin sector to be probed at colliders. They can also be leveraged to confirm that newly discovered states belong to a twin Higgs construction.

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