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Sakurai Prize: Beyond the Standard Model Higgs Boson¹

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The discovery of the Higgs boson strongly suggests that the first elementary spin 0 particle has been observed. Is the Higgs boson a solo act, or are there additional Higgs bosons to be discovered? Given that there are three generations of fundamental fermions, one might also expect the sector of fundamental scalars of nature to be non-minimal. However, there are already strong constraints on the possible structure of an extended Higgs sector. In this talk, I review the theoretical motivations that have been put forward for an extended Higgs sector and discuss its implications in light of the observation that the properties of the observed Higgs boson are close to those predicted by the Standard Model.

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