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Constraints on doublet left-right symmetric model from Higgs data

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We study the constraints on the doublet left-right symmetric model coming from the Higgs data. The SU(2)L symmetry of this model is broken by three vacuum expectation values,
k1, k2 and vL. Most model builders assume that vL and k2 are negligibly small compared to k1. We test whether this assumption is valid in light of the measurement of Higgs boson coupling to gauge bosons and third generation quarks and the lower limits on heavy neutral scalar masses. We find that the data, especially the coupling of light higgs to b-quarks and the lower limit on heavy neutral scalar, strongly disfavour very small values of vL and k2 relative to k1. In fact, the data prefers vL to be of the order of k1.

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