

Abstract Submitted  
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**Constraints on the Lee-Wick Higgs Sector** CHRISTOPHER CARONE, College of William and Mary — The Lee-Wick Standard Model has been proposed as a solution to the hierarchy problem. Lee-Wick partners to the Standard Model Higgs doublet may appear at a mass scale that is significantly lower than that of the remaining Lee-Wick partner states. In this case, the relevant effective theory is a two-Higgs doublet model in which one doublet has wrong-sign kinetic and mass terms. We determine bounds on this effective theory, including those from neutral B-meson mixing,  $b \rightarrow X_s \gamma$ , and  $Z \rightarrow b\bar{b}$ . The results differ from those of conventional two-Higgs doublet models and lead to meaningful constraints on the Lee-Wick Higgs sector.

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