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Search for Standard Model Higgs in ttbar-H, H→$b\bar{b}$ decay channel at $\sqrt{s}$ = 8 TeV JOHN WOOD, University of Virginia, CMS COLLABORATION — The most important goal of the Large Hadron Collider (LHC) is to elucidate the mechanism of electroweak symmetry breaking (EWSB). The Higgs boson of the Standard Model (SMH) is a prime candidate for EWSB. The newly discovered boson of July 4th, 2012, with a mass of 125GeV, has so far been consistent with a SM Higgs. The final confirmation of this new particle as the SMH - or a Higgs boson of another exotic EWSB mechanism - depends on future measurements of all of its properties. The observation of this new particle in association with top-quark pairs would allow the couplings of this particle to top and bottom quarks to be directly measured. Higgs boson production in association with top-quark pairs (ttH), with subsequent decay H→$b\bar{b}$, is an excellent channel to explore due to the dominant branching ratio of Higgs to $b\bar{b}$ and the kinematic handle the $t\bar{t}$ system offers in the event. However, it presents a plethora of difficult challenges due to a low signal to background ratio and uncertainties on kinematically similar SM backgrounds. This talk describes a search for the SMH in association with top-quark pairs. An analysis of the full 19.4 fb^{-1} 2012 dataset collected by the CMS detector and optimization of the latest results will be presented.

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