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Search for a Higgs Boson in Decays to WW^* at CDF BRITNEY RUTHERFORD, Fermi National Accelerator Laboratory, CDF COLLABORATION — We present a search for Standard Model Higgs production in $p\overline{p}$ collisions at $\sqrt{s} = 1.96$ TeV using approximately 4 fb^{-1} of data collected with the CDF II detector. We consider the diboson decay channel, $H \to WW$, which is the dominant decay mode for Higgs boson masses above 140 GeV/c^2. We further require both W bosons to decay leptonically. Both single and associated Higgs production modes are considered. In order to maximize sensitivity, a combined Matrix Element method and Neural Network approach is utilized to distinguish signal from background processes. Cross-section limits are presented for Higgs mass hypothesis between 110 GeV/c^2 and 200 GeV/c^2.

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