Measurement of the $Z/\gamma^* Z/\gamma^*$ Production Cross Section using 10.4 fb$^{-1}$ of $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV LEI FENG, Northern Illinois University, D0 COLLABORATION — We present a study of the $Z/\gamma^* Z/\gamma^*$ to four-lepton channel for $Z/\gamma^*$ masses greater than 30 GeV using the D0 detector in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV with data corresponding to an integrated luminosity of 10.4 fb$^{-1}$. We measure the $Z/\gamma^* Z/\gamma^*$ cross section and search for the Higgs boson arising from the $H \to ZZ$ and $HZ \to WWZ$ processes in 4-lepton final states using the $e^+e^-, e^+\mu^-$, and $\mu^+\mu^-$ channels.

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Date submitted: 10 Jan 2013

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