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Search for Exclusive W Boson Decays CHRISTOPHER CLARKE, Wayne State University — The W boson is an important part of the standard model for its role as a mediator of the weak force, and as such has been studied extensively. It's mass has been measured by LEP and Tevatron experiments. Since the first W's were produced at the $Sp\bar{p}S$ in the 1980's the properties of the W boson have been studied at the Tevatron, LEP, and the LHC. None of these studies have reconstructed an exclusive W boson decay. We propose to search for the exclusive decay $W^{\pm} \to J/\psi D_s^{\pm}$ and related low-multiplicity, partially reconstructed decays. The chosen mode yields an all charged track final state where $J/\psi \to \mu^+\mu^-$ and $D_s^{\pm} \to K^+K^-\pi^{\pm}$. This final state has a good trigger signature, the $J/\psi \to \mu^+\mu^-$ decay, and a number of constraints to suppress background. We discuss the possible yields in data from the CDF and CMS experiments.

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