

Abstract Submitted  
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**Improved  $b$ -quark identification strategy for the low mass Higgs boson searches at CDF** YURI OKSUZIAN, University of Virginia — We describe the optimization of a new  $b$ -jet identification method used in the Higgs boson searches at the CDF experiment at Fermilab. The method makes use of the Higgs Optimized B-Identification Tagger(HOBIT), which combines the information from various existing  $b$ -jet identification tools used at CDF via a multivariate algorithm. We consider the implementation of HOBIT for the Higgs boson search in the WH channel, where the Higgs boson is produced in association with a W boson. As the result, an improvement in the Higgs boson sensitivity in the WH channel of more than 10% is expected. The method presented can be applied to all of the primary low mass Higgs boson searches at CDF where the decay of the Higgs boson into a pair of  $b$  quarks is dominant.

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