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Improving the Higgs Mass Resolution JESSICA HANZLIK, Ohio State University, CDF (COLLIDER DETECTOR AT FERMILAB) COLLABORATION — The search for the Higgs boson is of great interest, with a variety of searches ongoing at the CDF and D0 experiments at the Tevatron at Fermilab, as well as planned searches in the upcoming LHC detectors ATLAS and CMS. At Fermilab, one primary mode for a low mass Higgs is via ZH production. In this channel, the Z boson decays into a neutrino pair, and the Higgs boson decays into a bottom quark and an anti-bottom quark pair. In these events, there are two jets (from the two quarks) as well as a large energy imbalance from the undetected neutrinos. This analysis investigates the use of the energy imbalance to improve the measurement of the individual jets and thus the determination of the resulting Higgs mass. The method we investigate involves the use of Artificial Neural Networks. We present expected improvements in Higgs mass resolution.

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