



Contribution ID: 17

Type: **Oral presentation**

Search for Standard Model $ZH \rightarrow llbb$ at D0

Wednesday, April 30, 2014 3:40 PM (20 minutes)

We present an improved measurement for the standard model Higgs boson production in association with a Z boson, using 9.7 fb⁻¹ of ppbar collision data collected by the D0 detector at $\sqrt{s} = 1.96$ TeV. Events are selected with two electrons or two muons that are consistent with the decay of a Z candidate, and at least two reconstructed jets including at least one b-tagged jet). We use improved algorithms for lepton reconstruction and use new optimization to determine the b-tagging operating points. Four dedicated random forests of decision trees (RFs) are trained in order to distinguish the signal from $t\bar{t}$, Z+Heavy Flavor jets, Z+Light Flavor jets and diboson background events respectively. The final discriminant is trained separately in five regions according to the output of the RFs. We measure the ZH production cross-section times Higgs branching ratio to two b-jets with improved sensitivity.

Primary author: JIANG, Peng (Univ. of Science & Tech. of China (CN))

Presenter: Mr JIANG, Peng (University of Science and Technology of China)

Session Classification: WG3: Electroweak Physics and Beyond the Standard Model

Track Classification: WG3: Electroweak Physics and Beyond the Standard Model