Contribution ID: **39** Type: **poster**

Probing the heavy flavor content of ttbar events in proton-proton collisions at CMS

Tuesday, 12 October 2010 18:40 (10 minutes)

In the framework of the standard model (SM), the top quark is expected to decay to a W-boson and a b-quark 99.8% of the times due to the Cabibbo-Kobayashi-Maskawa (CKM) matrix element Vtb being close to unity. The current experimental limits from the Tevatron on Vtb from top-quark pairs and single-top production are consistent with the SM predictions. The higher energy of proton-proton collisions and larger top quark production cross section at the Large Hadron Collider (LHC) may provide an improved reach in the measurement of Vtb. We present analysis strategies dedicated to measure ratios of branching ratios of the top quark using ttbar events collected with the CMS detector, in which either one or both W-bosons from the top-quark decays lead to a lepton and a neutrino. These di-leptonic and semi-leptonic final states provide high cross section with small background. The sensitivity of the measurement is evaluated after particle identification and detector reconstruction. Data-driven techniques to control the backgrounds are discussed and the expected simulation results are presented for the first physics run of the LHC. We also discuss how the method can be used to measure directly from data the efficiency of the algorithms used to discriminate jets coming from the hadronization of b quarks from the lighter quarks and gluons (b-tagging).

Primary author: TROPIANO, Antonio (Univ. Firenze and INFN)

Presenter: TROPIANO, Antonio (Univ. Firenze and INFN)

Session Classification: Poster

Track Classification: Poster