



Contribution ID: 1670

Type: Oral Presentation

Single top quark production measurements in CMS (15' + 5')

Thursday, 4 August 2016 17:20 (20 minutes)

Measurements are presented of t-channel single top quark production in proton-proton collisions at the LHC at centre-of-mass energies of 7, 8 and 13 TeV, using data collected with the CMS experiment during the years 2011, 2012 and 2015. The analyses consider leptonic decay channels of the W from the top decays, and makes use of kinematic characteristics of electroweak single top production for the separation of signal from backgrounds using multivariate methods. The measurement is used to constrain the V_{tb} CKM matrix element. The results are compared with the most precise standard model theory predictions. The inclusive fiducial cross section is also measured. Measurements of top/antitop cross section ratio and of various differential single top quark production cross sections are also presented.

Measurements of single top quark production in the tW-channel in pp collisions are presented. In the tW-channel a top quark is produced in association with a W boson. The data were collected in the years 2011 and 2012 at centre-of-mass energies of 7 and 8 TeV. The experimental signature is similar to top pair production, and there is interference at higher orders between the two processes. The measurements are performed using final states in which the associated W boson as well as the one originating from the top quark decay leptonically. Multivariate methods are used to extract the cross section. The result is compared with current standard model theory predictions. The measurement is used to constrain the V_{tb} CKM matrix element. Furthermore, a search for s-channel single top production at 8 TeV is presented.

Primary author: BAKHSHIANSOHI, Hamed (CP3, UCL)**Presenter:** BAKHSHIANSOHI, Hamed (CP3, UCL)**Session Classification:** Top Quark and Electroweak Physics**Track Classification:** Top Quark and Electroweak Physics