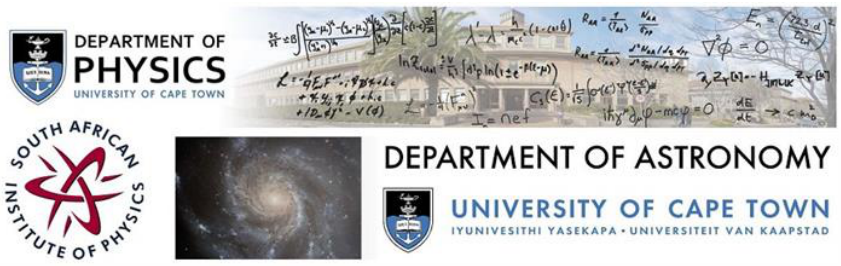

Contribution ID: **118** Type: **Poster Presentation**

Estimation of non-prompt fake muon background in scattering of two massive vector bosons (VBS), W W → W W .

Tuesday, 5 July 2016 16:10 (1h 50m)

Abstract content
   (Max 300 words)
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W[±]W[±] ⟶ W[±]W[±] is a rare Standard Model process which can be used to investigate the spontaneous symmetry breaking present in the Standard Model. Previous analysis using √s = 8 TeV proton-proton collision data recorded by the ATLAS detector at the Large Hadron Collider analysed W[±]W[±]jj production cross sections in two fiducial regions with different sensitivities to the electroweak and strong production mechanisms. Events with two reconstructed same sign leptons (e[±] e[±] ,e[±] μ[±] , and μ[±]μ[±]) and two jets were analysed. First evidence for W[±]W[±] production and electroweak only production were observed to a significance of 4.5 and 3.6 standard deviations respectively. Starting in 2015, analysis is underway to attempt to increase the significance for the measurements using √s = 13 TeV proton-proton collision data recorded by the ATLAS detector at the Large Hadron Collider. Since the process is very rare, it is dominated by various backgrounds, one of which is tt⁻ decay. In this presentation we discuss estimating the fake muon background coming from tt⁻decay using Monte Carlo simulations.

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Session Classification: Poster Session (1)

Track Classification: Track B - Nuclear, Particle and Radiation Physics