



Contribution ID: 867
compétition)

Type: Oral (Student, Not in Competition) / Orale (Étudiant(e), pas dans la

A search for heavy gluon and vector-like quark in the 4b final state in pp collisions at 8 TeV

Tuesday 16 June 2015 09:45 (15 minutes)

Searches for vector-like quarks are motivated by Composite Higgs models assuming a new strong sector and predict the existence of new heavy resonances. A search for single production of vector-like quarks is performed for the through the exchange of a heavy gluon in the $pp \rightarrow G^* \rightarrow B\bar{b}/\bar{B}b \rightarrow Hb\bar{b} \rightarrow b\bar{b}b\bar{b}$ process, where G^* is a heavy color octet vector resonance and B a vector-like quark of charge $-1/3$. The largest background, QCD multi-jet, is estimated using a data-driven method. In case of no excess of events, upper limits on the production cross sections and lower limits in the 2D plane $\{m_{G^*}, m_B\}$ will be set.

Author: DALLAIRE, Frederick (Universite de Montreal (CA))

Presenter: DALLAIRE, Frederick (Universite de Montreal (CA))

Session Classification: T1-5 Energy Frontier: Susy & Exotics I (PPD-DTP) / Frontière d'énergie: supersymétrie et particules exotiques I (PPD-DPT)

Track Classification: Particle Physics / Physique des particules (PPD)