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## Prospects for a Search for Vector-Like Quarks with Events that have Two Leptons of the Same Charge + b-Jets at $\sqrt{s} = 13$ TeV at ATLAS

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Vector-like quarks are predicted in several beyond the Standard Model theories. In some models, there is strong coupling to third generation quarks and the vector-like heavy quarks, T and B, can decay into several different channels involving third generation quarks. We search for vector-like quarks using events that have two leptons of the same charge and  $\geq 1$  b-jet. The prospects for discovery of vector-like quarks using pp collisions from the LHC Run II data collected with the ATLAS detector are presented. The method for determining the largest instrumental background, fake or non-prompt leptons, using data is discussed. The discovery reach for vector-like quarks at  $\sqrt{s} = 13$  TeV is compared against published results from Run 1 at 8 TeV.

### Oral or Poster Presentation

Oral

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