

## Vector-like quarks, leptoquarks and new gauge bosons search in Atlas

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The Standard Model of Particle Physics explains many natural phenomena yet remains incomplete. Leptoquarks (LQs) are hypothetical particles predicted to mediate interactions between quarks and leptons, bridging the gap between the two fundamental classes of particles. Vectorlike quarks (VLQs) lie at the heart of many extensions seeking to address the Hierarchy Problem, as they can naturally cancel the mass divergence for the Higgs boson. Many new physics models predict the existence of new, heavy particles. This talk summarizes recent ATLAS searches for Beyond-the-Standard-Model heavy resonances (LQ, VLQ, and other new gauge bosons) which decay to quarks, or leptons, using Run 2 data collected at the LHC.

**Primary authors:** DELIOT, Frederic (CEA-Saclay); HALEY, Joseph (Oklahoma State University)

**Presenter:** HALEY, Joseph (Oklahoma State University)

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