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## Searches for leptoquarks with the ATLAS detector

*Tuesday 22 August 2023 16:40 (15 minutes)*

Leptoquarks are hypothetical particles that appear in many theoretical extensions of the Standard Model. They are predicted to mediate interactions between quarks and leptons, bridging the gap between the two fundamental classes of particles. Other theoretical models such as supersymmetry, introduce a link between bosons and fermions, predicting also additional particles such as stops. Both extensions offer a compelling avenue for exploring new physics beyond the Standard Model and have the potential to explain a variety of experimental observations. Decays of supersymmetric particles, and leptoquarks decays to neutrinos lead to a characteristic shared signature of missing energy which allows for an easy interpretation of searches in both models. The ATLAS experiment at the Large Hadron Collider is conducting a comprehensive program of searches for leptoquarks and supersymmetric particles, targeting interactions with particles from all three generations. This talk will present the most recent results from the ATLAS collaboration's search for leptoquarks and stops in a range of experimental signatures, including flavour-diagonal and cross-generational final states.

### Collaboration / Activity

ATLAS

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