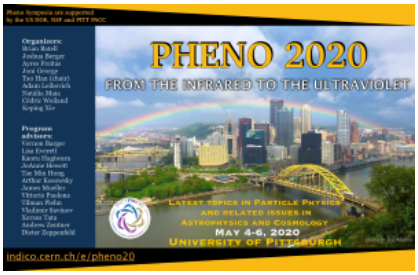

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Signatures of the $\tilde{R}_2$ class of leptoquarks at the upcoming ep colliders

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LQs are hypothetical particles which can emerge from the unification of quarks and leptons in the Pati-Salam model. LQs also exist in grand unified theories and extended technicolor models. Under the Standard Model (SM) representation, there are twelve types of LQs, six of them are scalar, while the other six are vector type of LQs. We consider the scalar LQ $\tilde{R}_2$ charged as (3,2,1/6) under SM gauge group. The advantage with $\tilde{R}_2$ type of scalar LQ is that in addition to the coupling with the lepton and jet, the model also has right handed (RH) neutrinos coupled to the LQ. Hence, this model provides unique signatures, that can be tested in different collider and non-collider experiments. We explore the signatures of the $\tilde{R}_2$ at the proposed ep colliders, LHeC and FCC-eh.

Summary

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