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Multi-Z'signatures from scalar boson decay in spontaneously broken U(1)'models

Tuesday, August 20, 2024 3:45 PM (2 hours)

In this talk, we discuss minimal spontaneously broken local U(1)' models. The candidates of U(1)' symmetry are $U(1)_{B-L}$, $U(1)_{L_i-L_j}$ and hidden U(1) so that the SM Higgs field is not charged under U(1)'. When U(1)' gauge symmetry is spontaneously broken we have both new gauge and scalar bosons. We show these models can provide multi-Z'signatures at the LHC via scalar boson production and decays, taking into account relevant constraints from Z'and new scalar boson search in various experiments.

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