

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

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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.

Primary author: NOMURA, Takaaki (Sichuan University)

Co-author: YAGYU, Kei (Osaka University)

Presenter: NOMURA, Takaaki (Sichuan University)

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