

Riccardo Bartocci
Institut für Physik, THEP
rbartocc@uni-mainz.de

Prisco Lo Chiatto
Institut für Physik, THEP
plochiat@uni-mainz.de

Nicklas Ramberg
Institut für Physik, THEP
nramberg@uni-mainz.de

Miroslava Mosso Rojas
Institut für Physik, THEP
mmossoro@uni-mainz.de

JOHANNES GUTENBERG
UNIVERSITÄT MAINZ



THEP Journal Club

Dec. 1, 2017 at 12:30 p.m.
Minkowski Raum, 05-119

Pizza & Physics at Lunchtime

Ben Stefanek
JGU Mainz

Strongly Coupled Chiral Gauge Theories at the LHC

A sector with QCD-like strong dynamics is common in models of non-standard physics. Such a model could be accessible in LHC searches if both confinement and big-quarks charged under the confining group are at the TeV scale. Big-quark masses at this scale can be explained if the new fermions are chiral under a new $U(1)'$ gauge symmetry such that their bare masses are related to the $U(1)'$ -breaking and new confinement scales. I will present a study of a minimal GUT-motivated and gauge anomaly-free model with implications for the LHC Run 2 searches. We find that the first signatures of such models could appear as two gauge boson resonances. The chiral nature of the model could be confirmed by observation of a $Z'\gamma$ resonance, where the Z' naturally has a large leptonic branching ratio because of its kinetic mixing with the hypercharge gauge boson.

Riccardo Bartocci
Institut für Physik, THEP
rbartocc@uni-mainz.de

Prisco Lo Chiatto
Institut für Physik, THEP
plochiat@uni-mainz.de

Nicklas Ramberg
Institut für Physik, THEP
nramberg@uni-mainz.de

Miroslava Mosso Rojas
Institut für Physik, THEP
mmossoro@uni-mainz.de

