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Particle Physics at LPTHE

Mardi 26 Novembre 2024, 14 :00
LPTHE, Library
Domaines : hep-ph

Titre : *A Kinetically Mixed Z'*

Orateur : **Ben Allanach (DAMTP Cambridge)**

Résumé : *We present a TeV-scale spontaneously broken U(1) gauge extension of the Standard Model based on third family baryon number minus second family lepton number. Such models explain some gross features of quark mixing and modify predictions for processes involving the b-¿s l+ l- transition. We review measurements of B-meson decays involving such transitions ; these display some disparity with state-of-the-art Standard Model predictions. A TeV-scale Z' field such as derives from the aforementioned model can ameliorate these predictions. However, to better fit lepton flavour universality testing variables, it is best if the Z' couples to di-electron pairs as well as di-muon pairs. This can be achieved by kinetic mixing of the new physics gauge field with the hypercharge gauge boson.*
