Contribution ID: **304** Type: **Poster**

Profiling Z' bosons using charge asymmetry in top pair production with the lepton-plus-jets final state at the LHC

We study the sensitivity of top pair production and six-fermion decay at the LHC to the presence and nature of an underlying Z' boson, accounting for full tree-level Standard Model interference, with all intermediate particles allowed off-shell. We concentrate on the lepton-plus-jets final state and simulate experimental considerations, including kinematic requirements and top quark pair reconstruction in the presence of missing transverse energy and combinatorial ambiguity in jet-top assignment. We focus on the differential mass spectra, as well as the charge asymmetry, demonstrating the use of this asymmetry in probing the coupling structure of a new neutral resonance, as well as cases in which the asymmetry forms a complementary discovery observable.

Author: MILLAR, Declan (University of London (GB))

Co-authors: SPANO, Francesco (Royal Holloway, University of London (GB)); CERRITO, Lucio (University of London (UK)); MORETTI, Stefano (STFC - Rutherford Appleton Lab. (GB))

Presenter: MILLAR, Declan (University of London (GB))

Session Classification: Poster Session

Track Classification: Top Quark physics