

# Phenomenology 2023 Symposium



Contribution ID: 67

Type: not specified

## On two-body and three-body spin correlations in leptonic $t\bar{t}Z$ production and anomalous couplings at the LHC

Tuesday 9 May 2023 15:45 (15 minutes)

We study the anomalous  $t\bar{t}Z$  couplings in the  $t\bar{t}Z$  production in leptonic final state at the 13 TeV LHC. We use the polarizations of top quarks and  $Z$  boson, two-body and three-body spin correlations among the top quarks and  $Z$  boson, and the cross section to probe the anomalous couplings. We estimate one parameter and simultaneous limits on the couplings of the effective vertex as well as the effective operators for a set of luminosities  $150 \text{ fb}^{-1}$ ,  $300 \text{ fb}^{-1}$ ,  $1000 \text{ fb}^{-1}$ , and  $3000 \text{ fb}^{-1}$ . The polarizations and the spin correlations are found to be helpful on top of the cross section to better constrain the anomalous couplings.

**Primary author:** RAHAMAN, Rafiqul (Harish-Chandra Research Institute, Prayagarj, India)

**Presenter:** RAHAMAN, Rafiqul (Harish-Chandra Research Institute, Prayagarj, India)

**Session Classification:** BSM IX

**Track Classification:** BSM