Abstract Submitted
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Constraining New Physics in Lepton Flavor Universality[1] CHEYENNE NELSON, MICHELE PAPUCCI, Lawrence Berkeley National Lab, SIMONE PAGAN GRISO, MAURICE GARCIA-SCIVERES, Lawrence Berkeley National Lab, ATLAS, LBNL THEORY TEAM — Searching for new physics beyond the Standard Model at high energy colliders requires an enormous investment in resources and time. Frequently these searches are applicable to test a broader range of theoretical models than they were originally designed to. The reinterpretation of experimental results imparts a broader impact to a given search while not requiring the further reprocessing of data, nor the further investment of resources. Our research presents the implementation of a newly developed software framework for reinterpretation, ATOM, the Automated Testing of Models. ATOM was utilized to reinterpret Z', W' and leptoquarks searches from the ATLAS experiment. Because of recent anomalies in lepton flavor universality measurements in heavy flavor decays, an evaluation of theoretical models that seek to account for these anomalies is of interest to the particle physics community. ATOM was used to evaluate viable models that endeavor to explain these heavy flavor anomalies by testing their relative correlation with experimental data from ATLAS.

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