Contribution ID: **10** Type: **Talk**

Reduce, Reuse, Recycle: an end-to-end pipeline for recycling particle physics results

Tuesday, 29 August 2023 16:35 (20 minutes)

Searches for new physics at the Large Hadron Collider have constrained many models of physics beyond the Standard Model. Many searches also provide resources that allow them to be reinterpreted in the context of other models. We describe a reinterpretation pipeline that examines previously untested models of new physics using supplementary information from ATLAS Supersymmetry (SUSY) searches in a way that provides accurate constraints even for models that differ meaningfully from the benchmark models of the original analysis. The public analysis information, such as public analysis routines and serialized probability models, is combined with common event generation and simulation toolkits MadGraph, Pythia8, and Delphes into workflows steered by TOML configuration files, and bundled into the mapyde python package. The use of mapyde is demonstrated by constraining previously untested SUSY models with compressed sleptons and electroweakinos using ATLAS results.

Primary author: STARK, Giordon (SCIPP, UC Santa Cruz)

Co-author: Prof. HANCE, Mike (SCIPP, UC Santa Cruz)

Presenter: STARK, Giordon (SCIPP, UC Santa Cruz)

Session Classification: Update on reinterpretation software