

Sherpa BSM Update

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Pre-2.2.0 BSM Models

- MSSM
- Anomalous Gauge Couplings
- Large Extra Dimensions
- Two-Higgs-Doublet Model
- Fourth Generation

Workflow through FeynRules

Lagrangian \longrightarrow FeynRules \longrightarrow UFO output \longrightarrow MC generator \longrightarrow Events

Universal FeynRules Output (UFO)

- Python format
- Very generic
- Generator independent
- Simplified validation and cross checks between generators
- Allows for full automatization from Lagrangian to MC events

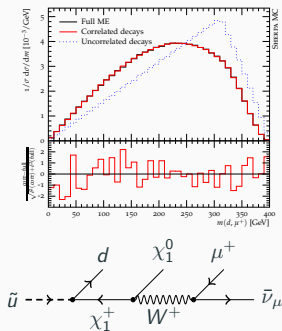
Full Automatization via Python Extension

- Loads UFO model
- Writes out a C++ model
- Generates Numerical routines for **arbitrary** coupling structures
- Compiles code, installs library to be loaded at runtime
- Once installed, model is available for event generation

Validation at $|\mathcal{M}|^2$ -level

- Comparison with MadGraph
- Five models
- Several hundred processes
- $2 \rightarrow 1, 2, 3, 4$ processes
- 6-point Lorentz structures

Spin-Correlations in Decay Chains



arXiv:1412.6478