

## Profile Likelihoods on ML-Steroids

*Thursday 27 February 2025 09:00 (15 minutes)*

Global SMEFT analyses combine a vast range of LHC measurements to construct likelihoods to put constraints on physics beyond the Standard Model. However, constructing and evaluating profile likelihoods for such analyses is computationally intensive and prone to instability and noise. We show how modern numerical techniques, similar to neural importance sampling, can dramatically enhance both efficiency and stability. Specifically, we focus on datasets used in previous SFitter analyses, combining data from the Top sector with Higgs, Di-Boson, and electroweak precision measurements to simultaneously constrain up to 42 Wilson coefficients.

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