

Apprentice for Event Generator Tuning

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Apprentice is a tool developed for event generator tuning. It contains a range of conceptual improvements and extensions over the tuning tool Professor. Its core functionality remains the construction of a multivariate analytic surrogate model to computationally expensive Monte Carlo event generator predictions. The surrogate model is used for numerical optimization in chi-square minimization and likelihood evaluation. Apprentice also introduces algorithms to automate the selection of observable weights to minimize the effect of mismodeling in the event generators. We illustrate our improvements for the task of MC-generator tuning and limit setting.

Primary authors: MRENNNA, Steve (Fermi National Accelerator Lab. (US)); KRISHNAMOORTHY, Mohan (Argonne National Laboratory); Dr SCHULZ, Holger (University of Durham); KOWALKOWSKI, James (Fermi National Accelerator Lab. (US)); MARSHALL, Zach (Lawrence Berkeley National Lab. (US)); JU, Xiangyang (Lawrence Berkeley National Lab. (US)); LEFFYER, Sven (Argonne National Laboratory); MUELLER, Juliana (Lawrence Berkeley National Laboratory); WANG, Wenjing (Lawrence Berkeley National Laboratory)

Presenter: KRISHNAMOORTHY, Mohan (Argonne National Laboratory)

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