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Tuning of Monte Carlo Event Generators (12'+3')

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Monte Carlo Event Generators are important tools to understand the physics of particle colliders. They play a key role in both the analysis of data collected by experiments and the design of new colliders and detectors. Due to the complexity of particle collisions and the limited ability of perturbative QCD to describe the low energy behavior of partons, we need phenomenological models to provide a complete prediction of many observables. However, these models contain several a priori unknown or weakly constrained parameters. A systematic tuning of these parameters based on experimental data allows us to optimize the predictions of Monte Carlo Event Generators and refine our understanding of the relevant models. In this talk, I will give an overview and finish by discussing recent systematic studies of tuning.

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