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Hadronization and Top Quark Matter Determination

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Most of the methods to measure the top quark mass suffer from the jet energy scaling issue in achieving better precision. As a way to get around this issue, the study of B-hadron observables is motivated. While they do not involve such an issue, understanding underlying hadronization models is a key to achieve ˜0.5% precision or better. In this presentation, I discuss the impact of the hadronization model parameters - for example, implemented in Pythia8 - on precision measurements of the top quark mass through B-hadron observables. I study the sensitivity of the top quark mass to relevant hadronization and showering parameters, followed by a discussion on observables to be used for constraining the hadronization and showering parameters.

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