Contribution ID: **142**   Type: **20 minutes talk**

Scheme Dependence in pQCD at the Four Loop Level

Friday, 17 December 2021 16:15 (30 minutes)

Explaining data from particle colliders relies on understanding the underlying quantum field theories, such as Quantum Chromodynamics (QCD) for processes involving the strong force. Measurable quantities in perturbative QCD are represented by series in the interaction coupling constant. The renormalization process introduces an ambiguity into calculations leading to multiple schemes for calculating the same measurable. Each scheme should result in the same ultimate value for the physical observable, however in practice the series is truncated to a finite order meaning each scheme expression is only an approximation of the true quantity. Therefore an error must be constructed to describe the uncertainty introduced through truncation. This talk discusses the use of scheme dependence as a measure of error at the four-loop level in massless pQCD concentrating on the R-Ratio and the Bjorken sum rule in various kinematic schemes and in particular the symmetric MOM schemes.

Could you please give the most relevant category for your talk?

QCD

Will you be pre-recording your talk?

No

Would you be interested in receiving feedback on your presentation?

Yes

Are you happy for your talk to be recorded?

Yes

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Session Classification: Full-length talks