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Alpha_s from tau decays: higher orders and perturbative behaviour

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I present a discussion of recent developments in the QCD description of hadronic tau decays with emphasis in the perturbative contribution. The perturbative series is the main ingredient in the extraction of the strong coupling (α_s) from these decays. The ambiguity due to the different prescriptions regarding the renormalization group improvement of the series is studied under different assumptions for the large-order corrections. Our results show that some of the hadronic spectral function moments employed in α_s determinations have poor perturbative behaviour and should be avoided. Exploiting this information we develop the optimal theoretical framework for precise α_s extractions from the 2014 update of the ALEPH data. Some preliminary results of our 2014 analysis will be discussed.

Summary

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