Strong coupling at the τ-mass scale from an improved vector isovector spectral function

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25m

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<kbd>Parallel Talk</kbd>   <kbd>B: Light quarks</kbd>   <kbd>Parallels Track B</kbd>

Palestrante

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Descrição

After a brief historical review of the α_s determination from tau decay and the difficulty of dealing with Duality Violations and the associated asymptotic nature of the OPE which was present in previous analyses, I will describe a new determination of the strong coupling constant based on an improved vector isovector spectral function. This spectral function results from combining ALEPH and OPAL distributions for the leading 2 and 4 pion channels with estimates of subleading contributions from e+e- by using CVC, which are accurate up to numerically irrelevant isospin-breaking corrections, and also the BaBar data for tau decay into kaon pairs. The resulting spectral function is thus based purely on experimental data and, unlike previous analyses, does not rely on Monte Carlo estimates. The new result for the strong coupling constant is $\alpha_s(m_\tau) = 0.3077 \pm 0.0075$, which corresponds to $\alpha_s(m_Z) = 0.1171 \pm 0.0010$.

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