

PRISMA+ Colloquium

July 19, 2023 at 1 p.m. Lorentz-Raum, 05-127, Staudingerweg 7

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On the determination of Delta alpha(M_Z): comparison between methods and frameworks

The fine structure constant is a fundamental parameter in the Standard Model, playing a crucial role in computing a wide range of observables and consistency relations. While the current error on $\Delta(M_Z)$ is at the level of $\delta(M_Z)$, future requirements, such as those of the FCC-ee/ILC, demand a reduction. In this talk, the referent presents an updated calculation of the hadronic contribution to $\Delta(M_Z)$. He will review different computational methods, such as the explicit integration in the timelike , renormalization group equations (RGE), and the euclidean split technique. The results emphasize the importance of accurately accounting for the charm quark contributions.

