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Short-distance constraints in hadronic-light-by-light for the muon $g - 2$

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We have made recent progress in studying the short-distance properties of the hadronic light-by-light contribution to the muon $g - 2$. The intermediate and short-distance part is a major contributor to the error of the theoretical prediction, see the white paper [arxiv:2006.04822, Physics Reports 887 (2020) 1-166]. We have recently shown that the massless quark-loop is the first term in a systematic expansion at short-distance [arxiv:1908.03331, Phys.Lett. B798 (2019) 134994]. This result already helped in the white paper in bringing down the error. Since then we have shown that both nonperturbative [arxiv:2008.13487, JHEP 10 (2020) 203] and the perturbative corrections [arxiv:2101.09169, JHEP 04 (2021) 240] are under control. The talk will describe these developments and how they fit in the total theoretical prediction for the muon $g - 2$.

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