## **EPS-HEP2023** conference



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## The Euclidean Adler function at the edge of the perturbative breakdown

The Adler function is one basic ingredient in the running of the QCD and QED couplings and in the muon g-2 prediction. We perform a comprehensive analysis of the Euclidean Adler function within perturbation theory at 2 GeVs, showing how, using existing results, a consistent and precise description beyond  $\mathcal{O}(\alpha_s^2)$  is possible if the study is made in an EFT-based set-up. We then build the corresponding dispersive data-based Euclidean Adler function using the DHMZ e+e- data compilation and finally a lattice-based one using recent results, which are known to be in tension in related observables. We then compare the three precise descriptions, study the phenomenological consequences, including a new method for extracting the value of the strong coupling constant and testing the RGE, and briefly discuss further possible applications. This poster is based on JHEP04(2023)067.

## **Collaboration / Activity**

QCD and Hadronic Physics

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