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The Strong2020 and Radio MonteCarLow activities

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During the last 15 years the "Radio MontecarLow ("Radiative Corrections and Monte Carlo Generators for Low Energies") Working Group, see www.lnf.infn.it/wg/sighad/, has been providing valuable support to the development of radiative corrections and Monte Carlo generators for low energy e+e- data and tau-lepton decays. Its operation which started in 2006 proceeded until the last few years bringing together at 20 meetings both theorists and experimentalists, experts working in the field of e+e- physics and partly also the tau community and produced the report
"Quest for precision in hadronic cross sections at low energy: Monte Carlo tools vs. experimental data"S. Actis et al. Eur. Phys. J. C 66, 585-686 (2010) (https://arxiv.org/abs/0912.0749), which has more than 300 citations.
While the working group has been operating for more than 15 years without a formal basis for funding, parts of our program have recently been included as a Joint Research Initiative in the group application of the European hadron physics community, STRONG2020, to the European Union, with a more specific goal of creating an annotated database for low-energy hadronic cross sections in e+e- collisions. The database will contain information about the reliability of the data sets, their systematic errors, and the treatment of RC.
All these efforts have been recently revitalized by the new high-precision measurement of the anomalous magnetic moment of the muon at Fermilab, which, when combined with the final result from the Brookhaven experiment, shows a 4.2σ discrepancy with respect to the state-of-the-art theoretical prediction from the Standard Model, including an evaluation of the leading-order hadronic-vacuum-polarization contribution from e+e− ⟶ hadrons cross-section data.
We will report on these Radio MonteCarLow and Strong2020 activities.

In-person participation

Yes

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