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The Strong2020 and RadioMonteCarlow activities

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During the last 15 years the "Radiative Corrections and Monte Carlo Generators for Low Energies" Working Group (Radio MontecarLow WG, 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 started in 2006 and proceeded until the last few years. During this period, the Radio MontecarLow WG held 20 meetings in which theorists and experimentalists, experts working in the field of e^+e^- physics and partly also from the tau community, produced the report "Quest for precision in hadronic cross sections at low energy: Monte Carlo tools vs. experimental data" [Eur. Phys. J. C 66, 585-686 (2010) (https://arxiv.org/abs/0912.0749)], cited more than 300 times.
While the working group has been operating for more than 15 years without a formal basis for funding, parts of the 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 Radiative Corrections. In this talk, we will report on both these initiatives. These efforts have been revived by the first measurement of the muon anomalous magnetic moment at Fermilab in 2021, which, when combined with the previous Brookhaven experiment, differs by $4.2\,\sigma$ from the White Paper Standard Model prediction [Phys. Rep. 887, 1 (2020)] and by $1.5\,\sigma$ from the Lattice based calculation [Nature 593 (2021) 51]; and also by the recent measurement of the $e^+e^- \to \pi^+\pi^-$ cross section measurement with the CMD-3 detector [arXiv:2302.08834v1 [hep-ex] (2023)], which evaluates the hadronic contribution to the muon anomalous magnetic moment that is significantly larger than the value obtained from previous measurements and hence it is in less tension with the experimental measurement of a_μ.

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Classifica Sessioni: Young Researchers Talks