Contribution ID: **188** Type: **Parallel session talk**

Towards a full NNLO Monte Carlo generator for low energy e+e- data into hadrons.

Monday 21 August 2023 17:21 (18 minutes)

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 (MC) 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 the 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. In parallel the theory community is continuing its effort towards the realization of a MC with full NNLO corrections for low energy e+e- data into hadrons, which is of relevance for the precise determination of the leading hadronic contribution to the muon g-2. We will report on both these initiatives.

Collaboration / Activity

Strong2020; Muon g-2;

Primary author: VENANZONI, Graziano (INFN-Pisa)

Presenter: VENANZONI, Graziano (INFN-Pisa)

Session Classification: T08 Flavour Physics and CP Violation

Track Classification: Flavour Physics and CP Violation