

Contribution ID: 764

Type: Parallel session talk

Probing B-anomalies via dimuon tails at the FCC

Friday 30 July 2021 10:15 (15 minutes)

Recent measurements of lepton-universality ratios and $B_s \rightarrow \mu^+\mu^-$ decay point to possible new physics contribution to $b \rightarrow s\mu^+\mu^-$ transitions. If new physics really is present, then it is possible that it could lie at a scale beyond the kinematical reach of the LHC or even that of a future, more energetic, proton-proton collider. In this instance, the relevant new physics is encapsulated by effective semi-leptonic four-fermion operators and its effects could be indirectly detected in the tails of dilepton invariant mass distributions.

In this talk, I will discuss the sensitivity of a future proton-proton collider to the relevant four-fermion operators when considering an inclusive dimuon final state at a centre of mass energies of 100 TeV. I will present 95% C.L. exclusion bounds on the Wilson coefficients of these operators as well as the values needed for a 5σ rejection of the SM background. Throughout this, I shall also discuss the validity of theses bounds within our EFT approach along with the effect that both NLO QCD and EW corrections to our EFT signal have on the sensitivity.

First author

Bradley Garland

Email

B.Garland@sussex.ac.uk

Collaboration / Activity

Theorist

Primary author: GARLAND, Bradley (University of Sussex)

Co-authors: Prof. JAEGER, Sebastian (University of Sussex); Dr KHOSA, Charanjit (Università di Genova & INFN); Dr KVEDARAITĖ, Sandra (University of Cincinnati)

Presenter: GARLAND, Bradley (University of Sussex)

Session Classification: T08: Flavour Physics and CP Violation

Track Classification: Flavour Physics and CP Violation