

Probing multi-TeV new physics through $b \rightarrow c \bar{c} s$ transitions

Wednesday 17 April 2019 17:40 (25 minutes)

I consider the flavour physics of the most general $b \rightarrow c \bar{c} s$ effective hamiltonian at dimension six, comprising 20 independent contact interactions. These interactions can give sizable contributions to radiative B decay, rare semileptonic B decays (P_5' , right-handed currents, etc) and B-meson lifetime observables. I will present bounds on the relevant contact interactions, which generally correspond to scales of a few TeV to 10 TeV or more. For new physics in one of the SM operators, I consider the CP-violating case. Here I show how how, when including $B \rightarrow J/\psi K$ data, one can both determine the (complex) Wilson coefficient and eliminate the most uncertain hadronic matrix elements, up to a discrete ambiguity.

Author: JAEGER, Sebastian (University of Sussex (GB))

Presenter: JAEGER, Sebastian (University of Sussex (GB))

Session Classification: Flavor

Track Classification: Flavor