

Masses and decay constants of $B_c^{(*)}$ mesons with $N_f = 2 + 1 + 1$ twisted mass fermions

Thursday, July 26, 2018 9:50 AM (20 minutes)

We present a preliminary lattice determination of the masses and decay constants of the pseudoscalar and vector mesons B_c and B_c^* . Our analysis is based on the gauge configurations produced by the European Twisted Mass Collaboration with $N_f = 2 + 1 + 1$ flavors of dynamical quarks. We simulated at three different values of the lattice spacing and with pion masses as small as 210 MeV. Heavy-quark masses are simulated directly on the lattice up to ~ 3 times the physical charm mass. The interpolation to the physical b-quark mass is performed using the ETMC ratio method: the bottom quark point is reached using ratios of physical quantities computed at nearby quark masses exploiting the fact that these ratios are exactly known in the static quark mass limit.

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Session Classification: Weak Decays and Matrix Elements

Track Classification: Weak Decays and Matrix Elements