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Study on the P-wave form factors of the B_s to D_s semi-leptonic decays from inclusive lattice simulations

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We present a pilot study on extracting the P-wave form factors of the B_s to D_s semi-leptonic decays from the B_s four-point correlators. With their inclusive nature, four-point correlators include all the exclusive states from B_s with valence content of c and s quarks. We access the P-wave form factors by excluding the contributions from the S-wave final states. In this pilot study, 2+1-flavour domain-wall fermion actions with approximately physical masses are utilized for light quarks. Heavy quarks, c and b , are simulated using relativistic-heavy quark actions. A single lattice ensemble with a lattice spacing of 0.11 fm is used for the analysis.

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