Contribution ID: **215** Type: **Poster**

Search for the semi-muonic weak decay □/□⟶□−□+□□

Monday, 3 July 2023 15:30 (1 hour)

Charmonium weak decay is allowed in the Standard Model but has never been observed. Using (10087±44)×106 □/□ events collected with the BESIII detector at the BEPCII □+□− storage ring at the center-of-mass energy of √□=3.097 GeV, we present a search for the charmonium rare semi-muonic decay □/□⟶□−□+□□ and its charge conjugation (c.c.) mode. Since no significant signal above the background is observed, we set an upper limit of the branching fraction to be BF(□/□⟶□−□+□□+□.□.)<5.6×10−7 at a confidence level of 90%. This is the first search for the weak decay of charmonium with a muon in the final state and the measurement is compatible with the SM theoretical predictions.

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Session Classification: Poster session & Coffee break