

Search for the rare weak decay $J/\psi \rightarrow D e \nu_e$

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Using 10.1×10^9 J/ψ events produced by the Beijing Electron Positron Collider (BEPCII) at a center-of-mass energy $\sqrt{s} = 3.097$ GeV and collected with the BESIII detector, we present a search for the rare semi-leptonic decay $J/\psi \rightarrow D^- e^+ \nu_e + c.c.$ No excess of signal above background is observed, and an upper limit on the branching fraction $\mathcal{B}(J/\psi \rightarrow D^- e^+ \nu_e + c.c.) < 7.1 \times 10^{-8}$ is obtained at 90% confidence level. This is an improvement of more than two orders of magnitude over the previous best limit.

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