

06 QUARKONIUM DECAYS

Study $a_0(980)$ - $f_0(980)$ mixing in charmonium decays

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摘要

In this proceeding, we propose to directly measure the $a_0^0(980)$ - $f_0(980)$ mixing in $J/\psi \rightarrow \phi f_0(980) \rightarrow \phi a_0^0(980)$ and $\chi_{c1} \rightarrow \pi^0 \phi a_0^0(980) \rightarrow \pi^0 f_0(980)$ with the upgraded Beijing Electron Positron Collider (BEPCII) with BESIII detector. We show that a narrow peak of about 8 MeV will be produced by the $\phi a_0^0(980)$ - $f_0(980)$ mixing, and the predominant feature makes it standing out from the background contributions. The predicted branching ratios for these two reactions are both expected to be about $O(10^{-6})$, which is unambiguously accessible with $10^9 J/\psi$ and $3 \times 10^8 \chi_{c1}$ at BESIII.

关键词 [a₀⁰\(980\)](#), [f₀\(980\)](#), [mixing](#), [BES](#)

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