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A triangle singularity in the $J/\psi \to \phi \pi^+ a_0^-(\pi^- \eta) decay

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We study the J/ψ ⟶ ϕπ+a0(980),(a0 ⟶ π−η) decay, evaluating the double mass distribution in terms of the π−η and π+a0 invariant masses. We show that the π−η mass distribution exhibitsthe typical cusp structure of the a0(980) seen in recent high statistics experiments, and the π+a0
spectrum shows clearly a peak around Minv(π+a0) = 1420 MeV, corresponding to a triangle singularity. When integrating over the two invariant masses we find a branching ratio for this decay ofthe order of 10−5, which is easily accessible in present laboratories.

session

D. Hadron Decays

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