

Formalism of Helicity Coupling Amplitudes for $J/\psi \rightarrow \pi^+\pi^-\pi^0$

PING Rong-Gang, LI Gang, and WANG Zheng

Institute of High Energy Physics, the Chinese Academy of Sciences, Beijing 100049, China
China Center for Advance Science and Technology (CCAST), Beijing 100080, China
(Received: 2006-3-9; Revised:)

Abstract: The formalisms of helicity coupling amplitudes for $J/\psi \rightarrow \pi^+\pi^-\pi^0$ are presented. A detailed discussion is also given on the barrier factor, Breit-Wigner, and density matrix. A Monte-Carlo simulation of $J/\psi \rightarrow \rho(770)\pi \rightarrow \pi^+\pi^-\pi^0$ is carried out. The results show that the $\rho(770)$ resonance is well reproduced compared with experimental data.

PACS: 13.25.Gv, 13.60.Hb, 13.75.Lb

Key words: helicity coupling amplitude, J/ψ decays, $\rho\pi$ puzzle

[\[Full text: PDF\]](#)

Close