A Study of the $\omega\eta$ and $\omega\pi^o$ systems Produced in the Reaction $\pi^- p \to \pi^+\pi^- 4\gamma n$ at 18 GeV/c

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Abstract

Results are presented on a study of resonant structure in the $\omega\eta$ and $\omega\pi^0$ final states produced in $\pi^- p$ interactions at 18 GeV/c where $\omega \to \pi^+\pi^-\pi^0$, $\pi^0 \to 2\gamma$, and $\eta \to 2\gamma$. Final states, such as $\omega\eta$ and $\omega\pi^0$, which contain a vector meson, are expected in the extended flux-tube model for the decay of hybrid mesons. For the $\omega\pi^0$ final state, the data exhibit the well-known $b_1(1235)$ and the $\rho_3(1690)$ resonances. A one-pion exchange mechanism is clearly seen for the $\rho_3(1690)$. A detailed partial wave analysis of both $\omega\eta$ and $\omega\pi^0$ is currently in progress.

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