

Search for exotic charmonium at BaBar

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One of the most intriguing puzzles in hadron spectroscopy are the numerous charmonium-like states observed in the last decade, including charged states that are manifestly exotic.

Over the years BaBar has extensively studied these states in B meson decays, initial state radiation processes and two photon reactions. We report on recent studies on some of these states performed using the entire data sample collected by BaBar in e^+e^- collisions at center of mass energies near $10.58 \text{ GeV}/c^2$. Among these, the study of the process $B \rightarrow J/\psi \phi K$ with a search for the $X(4140)$ and $X(4270)$ in their decays to $J/\psi \phi$, and a search for charged charmonium-like state $Z_c(3900)^{+}$ in the decay $Y(4260) \rightarrow J/\psi \pi^+\pi^-$.

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