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Study of $Z_c(3900)$ production in $p\bar{p}$ collisions

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We selected candidate events for production of the exotic charged charmonium-like states $Z_c^\pm(3900)$ decaying to $J/\psi\pi^\pm$ and $X(3872)$ decaying to $J/\psi\pi^\pm\pi^\mp$. We use 10.4 fb^{-1} of $p\bar{p}$ collisions recorded by the D0 experiment at the Tevatron collider at $\sqrt{s} = 1.96 \text{ TeV}$. We measure the Z_c mass and natural width using subsample of candidates originating from semi-inclusive weak decays of b-flavored hadrons and search for the Z_c prompt production. We also study various properties of the $X(3872)$ production that are compared to $\psi(2S) \rightarrow J/\psi\pi^\pm\pi^\mp$ production.

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