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Measurement of the relative branching fraction of $B_s \rightarrow J/\psi f_0(980)$, $f_0(980) \rightarrow \pi^+\pi^-$ to $B_s \rightarrow J/\psi \phi$, $\phi \rightarrow K^+K^-$

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A measurement of the relative branching fraction of $B_s^0 \rightarrow J/\psi f_0(980)$, $f_0(980) \rightarrow \pi^+\pi^-$ to $B_s^0 \rightarrow J/\psi \phi$, $\phi \rightarrow K^+K^-$ is presented. The decay mode $B_s^0 \rightarrow J/\psi f_0(980)$ is an interesting mode since it is a CP eigenstate and allows the measurement of the CP-violating phase ϕ_s . Using approximately 8 fb^{-1} of data recorded with the D0 detector at the Fermilab Tevatron Collider, a relative branching fraction of $0.210 \pm 0.032(\text{stat}) \pm 0.036(\text{syst})$ is found.

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