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Bs decays at Belle

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We study the decays $B_s^0 \rightarrow J/\psi\phi$ and $B_s^0 \rightarrow J/\psi K^+ K^-$ using a 121.4 fb^{-1} data sample collected at the $\Upsilon(5S)$ resonance with the Belle detector at the KEKB asymmetric-energy e^+e^- collider. The decay $B_s^0 \rightarrow J/\psi\phi$ is an important mode for measuring the CP violating phase β_s in the $B_s\bar{B}_s$ mixing, which is of particular interest as it is sensitive to physics beyond the Standard Model. Therefore, regarding the current PDG value with a relative error of 36%, a precise measurement of this branching fraction is essential. Furthermore, in this analysis the branching fraction of the decay $B_s^0 \rightarrow J/\psi K^+ K^-$, which has not been measured so far, is determined simultaneously with the branching fraction of the $B_s^0 \rightarrow J/\psi\phi$. By separating these two final states, it is also possible to calculate the S -wave contribution within the ϕ mass region.

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