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Recent progress on charmed hadron decays at BESIII

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BESIII has collected 7.93, 7.33, and 4.5 fb^{-1} of e$^+$e$^-$ collision data samples at 3.773, 4.128-4.226, and 4.6-4.7 GeV, which provide the largest dataset of charmed hadron pairs in the world, respectively, and present a unique opportunity to investigate charm decays.

For the hadronic decays, we will present the observation of D^+ to $K_s\, a_0(980)+$ and D to $a_0(980)^+\pi$, and the determination of U-spin breaking parameters of the decay D^0 to $K_L\, \pi^+\, \pi^-$, and recent progress on amplitude analyses, including $D_s^+ \to \pi^+\pi^+\pi^-\pi^0$, Λ_c^+ to $\Lambda\pi^+\pi^0$, and Λ_c^+ to $\Lambda\pi^+\eta$, along with the measurement of branching fractions of fifteen D_s^+ hadronic decays using a global fit. Futhermore, our talk will also includes the branching fraction measurements of the singly and doubly Cabibbo-suppressed decays of charmed hadrons and the measurement of the decay asymmetry in the Λ_c^+ decays.

For the (semi-)leptonic decays, we will present the first experimental study of $D_{(s)}^{*+}$ to $l^+\, \nu$ and the inclusive $\Lambda_c \to Xe\nu$ decays, and the improved measurements of $|V_{cs}|$ and D_s decay constant in $D_s^+ \to \mu^+\nu$ and $\tau^+\nu$. Finally, we will summarize the form factor studies in the decays of D_s to $\eta^{(\prime)}$, D_s to $f_0(980)$, D_s to ϕ, and D to $f_0(500)$, D to K^*.

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