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Study of scalar and vector mesons in the charmed hadron decays

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Charmed hadron decays offer an excellent environment for studying non-perturbative QCD. In addition, these decays involving scalar and vector mesons as final state particles play a crucial role in investigating the nature of scalar mesons, like a0 and f0, as well as examining the decay of vector mesons, like phi.

The BESIII experiment has collected 7.33 fbˆ-1 and 20 fbˆ-1 at 4.128-4.226 GeV and 3.773 GeV, respectively. In this talk, we will report our findings on the Lambda_c->Lambda a0(980) decay in Lambda_c->Lambda pi eta, as well as the measurements of the D(s)-> SP, SV, VP decays, in the amplitude analyses of D(s) three- and four-body decays. This includes the discovery of a new a0-like triplet and investigation of the W-annihilation-free decay D->K*eta. In addition, we will report our recent measurement of branching fraction of phi decays in charmed meson decays, revealing a result significant deviated from the PDG value. Furthermore, we will present our studies of D->S semi-leptonic decays, D(s)-> a0(980)/f0(980)/f0(500)/phi l nu, including the measurements of D->f0(980)/f0(500)/phi transition form factors.

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