Type: Talk

## **Radiative and Rare Charm Decays at BESIII**

Tuesday, 28 July 2020 17:00 (15 minutes)

In this talk, we present the latest result on radiative and rare/forbidden decays for D mesons at the BESIII experiment based on 2.92 fb-1 and 3.19 fb-1 data taken at the center-of-mass energy 3.773 4.178 GeV with the BESIII detector, respectively. Based the data at 4.178 GeV, a search for the rare radiative leptonic decay Ds->gamma e+ nu is performed for the first time with negative result and an upper limit (UL) of the branching fraction(BF) is set to be less than 1.310E-4 at 90\% confidence level (CL). With this data sample, we also search for the rare decay Ds-> p bar e+ nu. No significant signal is observed, and an UL B(Ds -> p pbar e+ nu)<2.010E-4 is determined at the 90\% CL. Using the dataset at 3.773 GeV, we search for rare decays of D-> h(h')e+e- with double tag method, where h(h') are hadrons. No significant excess over the expected backgrounds is observed, the ULs on the signal BFs at the 90\% CL are determined. For the D+ decays, the searches are performed for the first time, while for D0 decays, the ULs are improved in general by a factor of 10, compared to previous measurements. All the ULs on the BF, at the level of 10E-5 10E-6, are above the SM predictions, which include both LD and SD contributions. Also, we search for the Majorana neutrino in the lepton of the Majorana neutrino in the leptonK pi e+e-. No significant signal is observed, and the ULs on the BF at the 90\% CL are set to be less than few  $K-e+nu_N(pi-e+) and D+-> KSe+nu_N(pi-e+), and the UL on the BF at the 90\% CL are extracted to be at the level of 10E-interval of 10E-interva$ 7~10E-6. The constraints on the mixing matrix element |V\_{eN}|^2 are also evaluated.

## I read the instructions

Secondary track (number)

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