

Searches for Flavor Changing Neutral Currents at BESIII

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The Flavor Changing Neutral Current decays (FCNC) are forbidden at tree level in the Standard Model (SM) and could only contribute through loops. Any direct observation beyond the SM expectations could be a good probe of physics beyond the SM. BESIII is the only currently running tau-charm factory with the largest samples of on threshold charm meson pairs, directly produced charmonia and some other unique datasets. It has great potential to probe these FCNC decays from multiple channels.

This talk reviews some recent results on searches for FCNC decays from BESIII. We present searches for the decays of J/ψ , $\psi(3686) \rightarrow D^0 e^+ e^-$, $\psi(3686) \rightarrow \Lambda_c^+ \bar{p} e^+ e^-$, D^+ to $h e e$, $D^+ \rightarrow h^+ h^0 e^+ e^-$, $D^0 \rightarrow h(h') e^+ e^-$. The related searches with same sign electron pairs are also reported. The prospects and challenges with searches of other channels and the impact of future datasets are also discussed.

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