



Contribution ID: 7

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## Studies of $\chi_{cJ}$ and $\psi$ decays at BESIII

*Thursday, July 20, 2023 2:20 PM (20 minutes)*

In this talk, four recent measurements of  $\chi_{cJ}$  or  $\psi$  decays at BESIII will be presented. It contains: 1) Using 448 million  $\psi(3686)$  events collected with the BESIII detector, the process  $\psi(2S) \rightarrow \phi K_s K_s$  has been observed for the first time, and the branching fraction is determined; 2) Using the same data sample, the branching fractions of the decays  $\chi_{cJ} \rightarrow \phi \phi$  ( $J=0,1,2$ ) have been measured most precisely, and the polarization parameters of  $\chi_{cJ} \rightarrow \phi \phi$  have been determined for the first time via a helicity amplitude analysis; 3) Utilizing 2700 million  $\psi(3686)$  events collected by the BESIII detector, the decays  $\chi_{cJ} \rightarrow \Omega_{c\pm} \text{ anti-}\Omega_{c\mp}$  ( $J=0,1,2$ ) have been observed for the first time with high significance, respectively, via the radiative decays of  $\psi(3686) \rightarrow \gamma \chi_{cJ}$ . The relevant branching fractions have been provided. 4) The process  $e^+ e^- \rightarrow \eta J/\psi$  at a center-of-mass energy 3.773 GeV is observed for the first time, its Born cross-section is measured, and the branching fraction of  $\psi(3770) \rightarrow \eta J/\psi$  is determined by a combined fit with the cross-sections at other energy points, after considering the interference effect for the first time.

### Consent

I consent to recording/broadcasting my presentation.

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**Session Classification:** Parallel B

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