

Light hadron Spectroscopy and XYZ states at BESIII

The BESIII experiment at the electron positron collider BEPCII in Beijing is successfully operating since 2008 and has collected large data samples in the tau-mass region, including the world's largest data samples at the J/ψ and $\psi(2S)$ resonances. In particular decays of these two resonances provide a rich and clean environment to study hadrons consisting out of light quarks and search for exotics. The BESIII collaboration has recently started a campaign to understand the nature of the $X(1835)$ and $Y(2175)$ resonances, which are debated to be exotic matter. Further, decays of η' mesons are studied to deepen our knowledge of their structure and possible symmetry breaking effects in their decays. The BESIII Experiment also collected large data samples for electron-positron collisions with center-of-mass above 4 GeV during 2013 and 2014. The analysis of these samples has resulted in a number of surprising discoveries, such as the discoveries of the electrically charged "Zc" structures, which, if resonant, cannot be accommodated in the traditional charm quark and anti-charm quark picture of charmonium. In this talk, we highlight recent results of the light hadron physics program and review the current status of the analyses of the Zc structures, as well as a number of other interesting features in the new BESIII data samples.

Summary

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