

Fully charmed tetraquarks: new methods of experimental analysis and theoretical outline

Tuesday 29 October 2024 13:15 (15 minutes)

Experimental discovery of the resonant-like states in $\text{di-}J/\psi$ and $J/\psi\text{-}\psi(2S)$ mass spectra in pp-collisions near production threshold suggest the existence of the fully-charmed tetraquarks. Numerous theoretical models that followed the discovery describe the observed data, speculate on the physics of the new states and predict new observations.

Further studies require precise experimental measurements. The amplitude analysis is one of the approaches to the precise studies of hadron spectra. It allows simultaneous fits of the mass and angular distributions of the decay products, naturally accounts for the sophisticated interference effects between resonance candidates and background, detector effects, etc.

In this report, the most recent theoretical and experimental results together with their future perspectives and new data analysis techniques are discussed.

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Session Classification: High Energy Physics

Track Classification: High Energy Physics