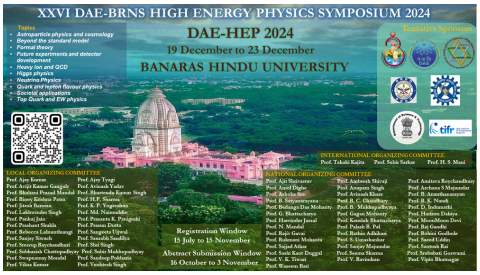

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Exploring all strange tetraaquark in diquark-antidiquark formalism.

Over the past two decades, numerous resonant states containing multiple strange quarks have been experimentally observed, shedding new light on the structure of exotic hadrons. In this study, we calculate the mass spectra of strange tetraquarks across various color configurations using both semi-relativistic and non-relativistic frameworks, with relativistic mass corrections incorporated via a Cornell-like potential model. The semi-relativistic approach accounts for relativistic corrections to the kinetic energy, enhancing the accuracy of our predictions. Additionally, we investigate the decay properties of these tetraquarks by exploring multiple decay mechanisms, allowing us to assess both their mass and decay characteristics simultaneously. This dual approach is crucial for identifying promising candidates for future experimental verification. Our results include predictions for various strange tetraquark states, which are compared with other theoretical models and the two-meson decay threshold. These comparisons provide valuable insights into the stability and behavior of these states, offering a clearer understanding of strange tetraquark dynamics. Ultimately, this work contributes to the ongoing effort to explore the exotic hadron spectrum and refine our theoretical models in light of experimental findings.

Field of contribution

Phenomenology

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