

量子物理学・ナノサイエンス第一回セミナー

Spectroscopy of chimera baryons: Top partners of a composite Higgs model with $Sp(4)$ gauge group

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- 日程** : 6月3日(水) 16:00 - 18:00
- 場所** : 本館2階 290 物理学系輪講室

概要

In the context of Composite Higgs Models, where the standard model Higgs is interpreted as a pseudo Nambu-Goldstone Boson emerging from a new strong sector, baryons formed by matters in different representations, known as chimera baryons, could serve as top partners. The chimera baryon sharing the same quantum number as the top quark can mix with it, effectively lifting the mass of the top quark. We report our results of the spectrum of low-lying chimera baryons in the quenched approximation on a $Sp(4)$ gauge theory. We perform spin and parity projections to separate the states and study their mass hierarchy. Particularly, we investigate the chiral extrapolation of chimera baryon masses. To accomplish this, we use a fitting function inspired by QCD chiral Effective Field Theory (EFT). Lastly, we present our current results using the dynamical fermions.

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