Contribution ID: **24**   Type: **not specified**

Chimera baryon spectrum in a Sp(4) lattice gauge theory

Friday, 9 December 2022 16:50 (15 minutes)

Chimera baryons are exotic objects playing the role of top partner in top partial compositeness among composite Higgs models. In the Sp(4) gauge theory with two fundamental and three antisymmetric Dirac fermions, they are composed of two fundamental and one antisymmetric fermion constituents. We present our preliminary results of Λ: (J, R) = (1/2, 5), Σ: (J, R) = (1/2, 10) and Σ_*: (J, R) = (3/2, 10) chimera baryons in the quenched approximation. The fermion mass dependance of chimera baryon masses and their hierarchy will be discussed. This exploratory study will provide a guidance of our future investigations with fully dynamical lattice simulations.

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Session Classification: Talks