Contribution ID: **325** Type: **Invited**

Spectroscopy of Heavy Baryons and Roles of Diquarks

Monday, 5 June 2023 14:00 (30 minutes)

Symmetry structures of the heavy baryon spectrum are discussed in this talk. Two important symmetries are heavy-quark spin symmetry and chiral symmetry. Due to the heavy-quark spin symmetry, the heavy hadron spectra show spin-doubling structures, while chiral symmetry may cause parity doubling structures. I will show recent studies based on chiral effective theory of diquarks and its consequences on the single-heavy baryon spectrum. We have also found that the axial U(1) anomaly plays important roles in the diquark sector, such that it induces inverse hierarchy of the diquark masses. Properties of diquarks at finite temperature/density are also discussed.

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Session Classification: Heavy baryon spectroscopy

Track Classification: Heavy baryon spectroscopy