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Λ(1405) as a pentaquark SACHIKO TAKEUCHI, Japan College of Social Work, KIYOTAKA SHIMIZU, Sophia University — Recent findings of the strangeness +1 particle gives new light to $q^4\overline{q}$ systems. Here we apply this method to investigate the features of the old but not-fully-understood baryon: Λ(1405). From the quark model view points, Λ(1405) has been considered as the flavor-singlet q^3 state with the orbital excitation. On the other hand, it has been reported that the state can also be understood as $N\overline{K}$ and $\Sigma\pi$ states [1]. Recent works of hyperuclei also suggest that Λ(1405) may have a more complicated structure than a simple baryon [2]. It is known that the $N\overline{K}$ $(TJ^P)=(0\ 1/2^-)$ state does not have a repulsion from the color-magnetic interaction, CMI. By introducing the mixing among the $q^4\overline{q}$ flavor multiplets, we have found that there are two states where CMI are strongly attractive and may form a resonance below the $N\overline{K}$ theshold. It is also interesting what kind of states they become when the system is bound in nuclei. In the present talk, we will discuss the features of the $q^4\overline{q}$ systems with the strangeness -1 $(TJ^P)=(0\ 1/2^-)$, and argue that this component may be important and should be mixed to the q^3 state.
[1] V.K.Magas, *et.al.* hep-ph/0503043.
[2] T.Suzuki, *et.al.* PL**B597**(04)263; Y.Akaishi and T.Yamazaki, PR**C65**(02)044005.

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