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H-dibaryon in Holographic QCD

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We investigate the H-dibaryon ($uuddss$) in holographic QCD [1, 2]. Holographic QCD is derived from a QCD-equivalent D-brane system in the superstring theory via the gauge/gravity correspondence. In holographic QCD, all baryons appear as topological chiral solitons of Nambu-Goldstone bosons and (axial) vector mesons [1, 2]. In this framework, the H-dibaryon can be described as an $SO(3)$ -type hedgehog state [3]. In this paper, we present the formalism of the H-dibaryon in holographic QCD, and investigate its properties.

[1] T. Sakai and S. Sugimoto, Prog. Theor. Phys. 113 (2005) 843; 114 (2005) 1083.

[2] K. Nawa, H. Suganuma and T. Kojo, Phys. Rev. D75 (2007) 086003.

[3] A.P. Balachandran et al., Phys. Rev. Lett. 52 (1984) 887.

Summary

We investigate the H-dibaryon ($uuddss$) in holographic QCD, which is derived from a QCD-equivalent D-brane system via the gauge/gravity correspondence.

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