



Universality of two neutrons and one flavored meson in Pionless Effective Theory

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In this talk I shall present our investigation of the s-wave three-body system of two neutrons and one flavored meson with total spin-isospin $J = 0, I = 3/2$. The meson-neutron scattering length can become infinitely large when extrapolated to an unphysical region of the quark mass between strangeness and charm in the so-called zero coupling limit. Using pionless EFT at the leading order, we demonstrate that the well-known Efimov effect is formally manifest in the three-body system when the meson-neutron scattering length approaches the unitary limit of the two-body interaction. I shall thereby discuss the consequence of remnant universal physics in the physical K^-nn and D^0nn systems. Our results are indicative of the fact that a ground state of the D^0nn system is much more likely to be realized as halo-bound state than for the K^-nn system under reasonable idealization of eliminating (subthreshold D^0n) decay channels. To that end, certain qualitative estimations about the three-body character of such an ostensibly bound D^0nn system shall be discussed.

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4:00 pm

Lindley Hall room 321