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Lambda-Nucleon and Sigma-Nucleon interactions from lattice QCD with physical masses

Friday 29 July 2016 15:00 (20 minutes)

We present our recent study on baryon-baryon (BB) interactions from lattice QCD with almost physical quark masses corresponding to $(m_\pi, m_K) \approx (146, 525)$ MeV and large volume $(La)^4 = (96a)^4 \approx (8.2\ \mathrm{fm})^4$. In order to make better use of large scale computer resources, a large number of BB interactions from NN to ΞΞ are calculated simultaneously. In this contribution, we focus on the strangeness $S = -1$ channels1 of the hyperon interactions by means of HAL QCD method. More recent results will be presented which include ΛN−ΣN coupled-channel potential comprising the tensor force as well as increasing the Monte Carlo samples than shown in the past1.

References:
1 H. Nemura, et al., arXiv:1604.08346 [hep-lat].
enter link description here

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