Dynamical calculations of $\bar{K}$ and multi–$\bar{K}$ nuclei

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In the present contribution we report on recent dynamical calculations of $\bar{K}$ and multi–$\bar{K}$ nuclei across the periodic table [1,2,3]. A wide range of binding energies was spanned by varying the $\bar{K}$ couplings to the meson fields. The K^- absorption was taken into account within the optical model phenomenology constrained by global fits to kaonic atom data. We analyzed in detail processes and conditions, which determine the K^- decay width in the nuclear medium. Calculations of nuclear systems with several $\bar{K}$ mesons revealed that the resulting $\bar{K}$ separation energy, as well as the associated nuclear and $\bar{K}$ densities, saturate with the number of $\bar{K}$ mesons embedded in the nuclear medium. Finally, we explored properties of possibly self-bound strange systems made out of neutrons and $\bar{K}^0$ mesons, or protons and K^- mesons.

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