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Theory of antikaon-nucleon interactions in the age of SIDDHARTA

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An updated review on Kbar-N interactions is given within the theoretical framework of chiral SU(3) dynamics. The coupled-channels equations are solved with special emphasis on the constraints provided by the new kaonic hydrogen data from the SIDDHARTA measurements. Precision fits to K-p threshold and scattering data are performed and a new value of the complex K-p scattering length is deduced. Next-to-leading order terms in the chiral SU(3) meson-baryon effective Lagrangian are discussed as well as implications for subthreshold extrapolations of the K-p amplitude.
(Work performed in cooperation with T. Hyodo and Y. Ikeda, Tokyo Institute of Technology).

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