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New precision era of strong interaction studies of the antikaon-nucleon interaction JOHANN MARTON, Stefan Meyer Institute, SIDDHARTA COLLABORATION — The antikaon interaction on nucleons and nuclei in the low-energy regime is a challenging research field in experiment as well as in theory. New precise data are available from x-ray spectroscopy of the lightest hadronic atoms with strangeness performed at DAFNE of LNF/INFN-Frascati by the SIDDHARAT International Collaboration. From the measurement of the x-ray transitions to low-lying levels the up-to-now most precise values for strong interaction parameters (hadronic shifts and widths) were extracted. The new precision data are crucial input for theory. The SIDDHARTA experimental method, the final results and the implications for our understanding of strong interaction with strangeness as well as future plans will be presented.

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