Precision spectroscopy of kaonic helium x rays

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To study the low-energy $\bar{K}$-nucleus strong interaction, we have measured the Balmer-series x rays of kaonic ^{4}He atoms using novel large-area silicon drift detectors at KEK (KEK-PS E570). The strong-interaction shift of the $2p$-state was deduced as 2 ± 2(stat)±2(syst) eV from three transition energies [1], and a width narrower than that of past experiments was observed. These results are consistent with optical-model calculations [2,3], thus eliminating a long-standing discrepancy between theory and experiment.

In this contribution, we will report on details of the analysis and the latest results obtained.

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