

Design and setup of a high resolution X-ray detector system for the kaonic deuterium experiment at J-PARC

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The study of the $\bar{K}$ barN system at low energies play a key role for the understanding of the strong interaction between hadrons in the strangeness sector. Based on the development of new X-ray detectors and on the availability of the intense kaon beam line K1.8BR at J-PARC the kaonic deuterium experiment will provide the strong-interaction level shift and width of the kaonic deuterium 1s state. The measurements of the X-ray transitions to the 1s level in kaonic deuterium will allow, together with the available results from kaonic hydrogen, to extract the isospin-dependent antikaon-nucleon scattering lengths. I will present Monte Carlo simulation to optimize the kaonic deuterium experiment and I will give a overview of the setup.

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