

XVth Quark Confinement and the Hadron Spectrum



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Physics Overview of J-PARC

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J-PARC, Japan Proton Accelerator Research Complex, is located in Ibaraki, Japan. It is capable of providing a high-intensity proton beam of up to 30 GeV. A broad nuclear and particle physics program is conducted at J-PARC's Hadron Experimental Facility to study matter in extreme conditions, understand the origin and structure of hadrons, and search for physics beyond the standard model. This includes hypernuclear and hadron spectroscopy, hyperon scattering experiments, studies of exotic meson-nucleus systems, and searches for CP-violating rare kaon decays. In this talk, I will focus on research activities at the Hadron Experimental Facility. It accepts a slowly extracted 30 GeV proton beam from the J-PARC Main Ring and provides either directly the primary proton beam or secondary beams such as pions and kaons to its experimental areas. I will review the outcomes of the experiments and discuss some of the current and future physics programs. I will include one of my recent activities, which involves dielectron measurement in $p+A$ collisions at J-PARC, which aims to study the spectral change of vector mesons in a nuclear medium.

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