Study of elementary particles with Belle/Belle II detectors at the KEKB high-energy electron and positron collider

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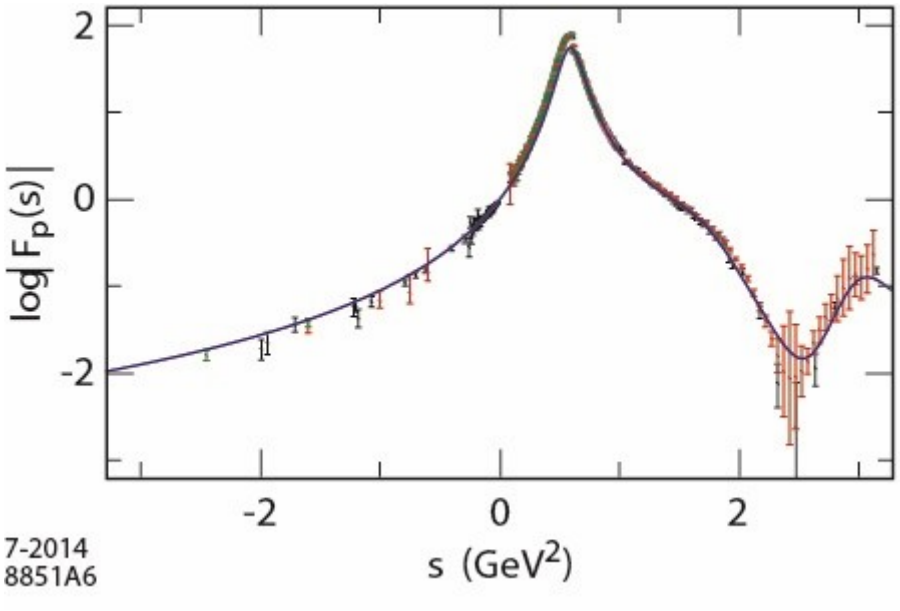

Pion form factor of the space-like (s<0) and time-like (s>0) region measured by various experiments in the world. The Belle results[1] taken from the tau-lepton 2πdecays are shown by the red points at s>0. The solid line is based on holographic QCD models [2], derived from the correspondence between 5th dimension gravity theory and the 4th dimension field theory (gravity/QCD correspondence).

[1]M. Fujikawa et al., Phys. Rev. D78, 072006(2008).
[2]S. Brodsky et al., Phys.Rep. 584, 1-105 (2015) (see Fig.6.2)

My field is the experimental research on the particle physics. I have been working on the Belle experiments at the KEK high-energy e- e+- collider in Japan since early 1990. The Belle experiment observed the first large signals for CP violation (matter-antimatter asymmetries) in the B meson sector. These results demonstrated Kobayashi and Maskawa's hypothesis for the origin of the CP violation is correct and provided the experimental foundation for their 2008 Nobel Prize in Physics. The Belle II, the first super B-Factory experiment, is under construction and is planning to take first data at 2017. Belle II is designed to find New Physics beyond the Standard Model of particle physics, such as Dark matter, some anomaly in the bottom and charm quarks, charged lepton-flavor violation and CP violation in the lepton sector. It is also important tasks to provide high-quality data for strong coupling region on the strong interactions that is not understood well yet.

Keywords :Dark Matter, CP violation, tau lepton, Hadron dynamics, Holographic QCD