

733th ASRC Seminar

Date: 15:00~ Tue., OCT 16

Location: 302 Meeting Room, ASRC Bldg.

Speaker: Dr. Kim Hyun-Chul
(Research Fellows / Inha University)

Title: Killing or Saving Pentaquarks?

Abstract:

In 2003, when the pentaquark Θ^+ was found by the LEPS Collaboration in Japan first time in history, physics community was enraptured at the finding of this particle. Tons of theoretical papers were followed to explain the characteristics of that five-quark baryon and its properties. In 2006, the situation underwent a sudden change by the CLAS experiment, which obtained only the null result. So, the Θ^+ disappeared! In the meanwhile, a narrow bump structure or a narrow nucleon resonance $N^*(1685)$ was found first time from the GRAAL experiment of η photoproduction off the quasi-free neutron. The LHCb Collaboration announced the existence of the heavy pentaquark, which consists of three light quarks, and a charmed and anticharmed quark pair. In the last year, the LHCb Collaboration reported the findings of the excited Ω_c 's of which three have very narrow widths. The narrowness is one particular feature of the pentaquark baryons. So, two of them can be theoretically interpreted as pentaquarks.

In this seminar, I will briefly review the history of the Θ^+ , $N^*(1685)$, the heavy pentaquarks, and excited Ω_c 's. Then I want to suggest a couple of the ultimate and golden experiments that can be performed at here, the J-PARC.

なお、今回のセミナーは、第77回「原子核ハドロン物理セミナー」
を兼ねております。セミナー内容は
http://silver.j-parc.jp/hadron/hadron_seminar/index.html
でご覧になれます

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