Contribution ID: **33** Type: **not specified**

# Understanding the nature of the heavy pentaquarks and searching for them in pion-induced reactions

*Wednesday, 27 July 2016 14:45 (30 minutes)*

The LHCb collaborations recently reported the observations of two resonance-like structures, which could be the long-searching-for pentaquark states. When studying these heavy pentaquark candidates, usually one will confront two issues, i.e., what their underlying structures are and how to search for them in experiments. We indicated that these resonance-like peaks may be resulted from some kinematic threshold effects, in particular the triangle singularity mechanism. The triangle singularity mechanism is a highly process-dependent mechanism, which is very different from other dynamic mechanisms. This may bring ambiguities on our understanding of the nature of those exotic states. We therefore needs different kinds of processes to check this mechanism. The piN scattering into J/psi-pion-proton could be a promising reaction to search for the heavy pentaquark or the effects induced by the triangle singularity mechanism. The forthcoming J-PARC pion-induced experiment may offer us a good opportunity to check different kinematic or dynamic mechanisms and clarify the ambiguities.

**Presenter:** LIU, Xiao-Hai (Tokyo Institute of Technology)

**Session Classification:** Pentaquarks