Contribution ID: **6**   Type: **not specified**

Renormalon problem in QCD and a direction to go beyond perturbation theory II

Tuesday, 7 July 2020 11:00 (1 hour)

In QCD, perturbation theory is an indispensable tool but is not an ultimate method in the sense that accuracies of perturbative predictions are limited. In particular, the so-called renormalon problem is known that perturbative expansions of observables give divergent series and cause inevitable uncertainties. This problem is becoming more serious from phenomenological aspects in recent years. I first give a review of the renormalon problem. The contents include causes of the divergence of perturbative series and its implications to nonperturbative physics. Subsequently, I discuss a possible direction to overcome the renormalon problem. For this purpose, one has to calculate perturbative contributions compatibly with the operator product expansion so that nonperturbative effects can eventually be included.

Presenter: Dr TAKAURA , Hiromasa (KEK)