

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Wei Chen, Post Doc
Department of Physics & Engineering Physics

TOPIC: *The hidden-charm exotic states in QCD*

DATE: March 14th, 2017

TIME: 3:30-4:30 p.m.

PLACE: Physics 103

ABSTRACT:

Quantum chromodynamics (QCD) is the theory describing the strong interaction between colored quarks and gluons. Hadrons are clearly bound states of quarks by exchanging mediated gluons, via non-Abelian gauge interactions. The problem of hadron spectroscopy involves the low-energy regime of QCD, which is the most technically-challenging aspect of the theory. The spectrum of hadrons is of great importance to our deeper understanding of QCD. To date, most of the experimentally observed hadrons can be described as quark- antiquark mesons or qqq baryons in the conventional quark model. However, QCD itself allows much richer hadron configurations. Since 2003, many charmonium-like states were observed experimentally. These newly observed XYZ states contain a pair of charm and anti-charm quarks whose masses and decay properties are not consistent with the potential model predictions. Many of these XYZ states do not fit in the conventional quark model and are therefore considered as exotic state candidates. Especially those charged charmonium-like Z_c states and bottomonium-like Z_b states cannot be accommodated within the naive quark model. Recently, the LHCb Collaboration discovered two hidden-charm pentaquark states, which are also beyond the quark model. In this talk, I review the current experimental progress and investigate these candidates of the multiquark states in the framework of QCD sum rule approach.

Coffee and Cookies will be served in the Physics lounge at 3:00 p.m. for those attending the seminar.