SEMINAR NOTICE

Department of Physics and Engineering Physics
University of Saskatchewan & QuanTA: Centre for Quantum Topology and Its Applications

---

SPEAKER: Mao Yoshii, Tokyo University

TOPIC*:* ***Invitation to heterolayer systems: Toward extension to the superconducting phase***

DATE: Tuesday March 12th, 2024

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

PLACE: ***Physics 103***

Abstract:

It has been almost 20 years since the exfoliation technique for graphene was developed at the beginning of this century. Various two-dimensional materials can now be produced and their properties have been investigated. These thin films exhibit different properties from their original three-dimensional counterpart, but we can also create new systems by stacking them.
In particular, in recent years, the discovery of unconventional superconductivity in magic-angle twisted bilayer graphene and the improvement of fabrication techniques of multilayer systems have increased attention to the superconducting state of heterolayer systems.
On the other hand, thin-film multilayer systems are generally quasiperiodic and this makes theoretical studies difficult. For noninteracting systems, we have the so-called Brillouin Zone (BZ) folding method which helps us to study multilayer systems efficiently. However, this method has not been extended to interacting systems. In this talk, we will start with a review of the BZ folding method for normal-conducting phases and then extend it to superconducting phases.

Coffee and treats will be served in Physics 175 at 3:00pm to those attending the seminar.