

Graduate Seminar in Mathematics

**Huadong Su,
Memorial University**

**Friday, February 15, 2013
2:00p.m., HH-3017**

The unit graph of a ring

Abstract:

In this talk, we introduce the unit graph of a ring defined by Ashrafi, Maimani, Pournaki and Yassemi. Let R be a ring with identity. The unit graph of R , denoted by $G(R)$, is a simple graph with vertex set R , and two distinct vertices x and y are adjacent if and only if $x+y$ is a unit of R . In this talk, we will firstly present some examples and basic properties of $G(R)$. Then we characterize the rings R such that $G(R)$ is a complete graph, or a (complete) bipartite graph. We also give the sufficient and necessary condition for $G(R)$ to be a connected graph. Finally, we classify all finite commutative rings by the diameter of their unit graphs.