

# Graduate Student Seminar in Mathematics

**Dr. Marco Merkli  
Memorial University**

**Thursday, March 24, 2016  
HH-3017, 1:00p.m.**

***The Berry phase***

**Abstract:**

When a quantum system is subject to a slow periodic evolution, its state does not return to the original value after one period, rather, it is changed by a phase factor. The phase is the sum of a dynamical and a geometric part. The geometric phase was discovered in 1984 by the mathematical physicist Sir Michael Victor Berry. I will present some of Berry's calculations leading to a pleasant expression of the geometric phase. I will also explain an important stability property: fluctuations in the Berry phase do not contribute significantly to decoherence (no significant loss of quantumness).