



## Number Theory Seminar

# On the Birch and Swinnerton-Dyer formula modulo squares for certain quadratic twists of elliptic curves

**Prof. Mok Chung Pang**

Shanghai Institute for Mathematics and  
Interdisciplinary Sciences

### Abstract

In this talk we discuss the Birch and Swinnerton-Dyer formula modulo square of rational numbers for the quadratic twist family of a given elliptic curve over  $\mathbb{Q}$ . In particular we show the following: let  $E$  be a semistable elliptic curve over  $\mathbb{Q}$  with conductor  $N$ , whose analytic rank is at most one, then for any positive fundamental discriminant  $D$  that is relatively prime to  $N$ , such that the quadratic twist  $E^D$  again has analytic rank at most one, we have that the Birch and Swinnerton-Dyer formula modulo square of rational numbers holds for  $E$  if and only if it holds for  $E^D$ . Joint work with Alexander Barrios.

Date: February 23, 2026 (Monday)

Time: 3:00 pm – 4:00 pm

Venue: Room 210, Run Run Shaw Building, HKU