

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

# COLLOQUIUM

## Fundamental Group – the Intertwine of Arithmetic and Geometry

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### Abstract

In this talk I am going to present the beautiful theory of fundamental groups in algebraic and arithmetic geometry. I will start by recalling the fundamental group of a topological space and the Galois group of a field. Then I will explain a striking analogy between these two groups which come from geometry and number theory respectively. Next, I will introduce the étale fundamental group in algebraic arithmetic geometry which is an analogy of the topological fundamental group and which is a generalization of the Galois group. Finally, I will explain Grothendieck's anabelian program which arises naturally from the study of fundamental groups, and then I will present a recent result of M. Romagny, F. Tonini, and me in this direction.

**Date:** March 7, 2018 (Wednesday)

**Time:** 12:00noon - 1:00pm

**Venue:** Room 210, Run Run Shaw Bldg., HKU

*All are welcome*