THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

C O L L O Q U I U M

Analytic and geometric applications of higher adelic structures on arithmetic surfaces

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Date:	March 4, 2024 (Monday)
Time:	4:00 – 5:00pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

Abstract

Adelic objects of classical one dimensional objects, such as global and local fields and algebraic reductive groups over them, play fundamental roles in class field theory and Langlands correspondences. Two-dimensional objects, such as regular proper models of curves over global fields, possess two different higher adelic structures, associated to 0-cycles and 1-cocycles. Integration on the former leads to a higher version of Tate thesis and higher Langlands correspondences in perspective. Geometrical applications of the latter include new higher adelic approaches to the intersection theory and Arakelov geometry. Interaction between the former and the latter in explicit higher class field theory leads to a new approach to the Tate-Birch-Swinnerton-Dyer conjecture.

All are welcome