THE UNIVERSITY OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

Number Theory Seminar

A LOCAL CRITERION FOR EXTENDING REPRESENTATIONS OF ETALE FUNDAMENTAL GROUPS

Prof. Anna Cadoret
IMJ-PRG, Sorbonne Université

Abstract

Let k be a p-adic field with ring of integers O_k, X a smooth, geometrically connected variety over k and $\pi_1(X) \to \Pi$ a continuous representation of the etale fundamental group of X with target a profinite group Π. Assume X admits a 'nice' model $\mathcal{X}$ over O_k. We prove that if there exists sufficiently "many" closed points x in X which are integral with respect to X and such that the resulting representation $\pi_1(x) \to \pi_1(X) \to \Pi$ is unramified – viz. factors through $\pi_1(x) \to \pi_1(O_{k(x)})$, then $\pi_1(X) \to \Pi$ factors through $\pi_1(X) \to \pi_1(\mathcal{X})$. After stating more precisely our own results, I will mostly focus on applications. This work is joint with Akio Tamagawa.

Date:	November 23, 2026 (Monday)
Time:	11:15 am – 12:15 pm
Venue:	Room 210, Run Run Shaw Building HKU

All are welcome