Speaker: Wanlin Li

Title: Newton Polygon Stratification of the Torelli Locus in PEL-type Shimura Varieties

Abstract: A fundamental problem in arithmetic geometry is to determine which abelian varieties arise as Jacobians of (smooth) curves. In positive characteristic p, we study this problem from the moduli perspective by asking which Newton strata intersect the Torelli locus in the moduli of abelian varieties. In this talk, I will introduce a general picture where we try to answer his question by replacing A_g with a Shimura variety of PEL-type, and M_g with a Hurwitz space of cyclic covers of P^1. Using an inductive method, when $p = 2 \pmod 3$, for all g, we prove the existence of a smooth curve of genus g whose Newton polygon has about $2g/3$ slopes of $1/2$. This work is joint with Mantovan, Pries and Tang.