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.