

Speaker: Jacob Tsimerman

Title: Lower Bounds for Galois Orbits of CM points

Abstract: Let x be a CM point in the moduli space $\mathcal{A}_g(\mathbb{C})$ of principally polarized complex abelian varieties of genus g , corresponding to an Abelian variety A with complex multiplication by a ring R . Edixhoven conjectured that the size of the Galois orbit of x should grow at least like a power of the discriminant $\text{Disc}(R)$ of R . For $g = 1$, this reduces to the classical Brauer-Siegel theorem. A positive answer to this conjecture would be very useful in proving the André-Oort conjecture unconditionally. We will present a proof of the conjectured lower bounds in some special cases, including $g \leq 6$. Along the way we derive transfer principles for torsion in class groups of different fields which may be interesting in their own right.