"The theory of complex multiplication which forms a powerful link between number theory and analysis, is not only the most beautiful part of mathematics but also of all science."

— D. Hilbert, ICM 1932

The Trivial Notions Seminar
Proudly Announces

The André–Oort conjecture and abelian varieties isogenous to no Jacobian

A talk by
Yunqing Tang

Abstract

Is every abelian variety over $\bar{\mathbb{Q}}$ isogenous the Jacobian of some stable curve? The answer is yes when the dimension of the abelian variety is at most three and NO otherwise. If we replace $\bar{\mathbb{Q}}$ by $\mathbb{C}$, this question is easy by a dimension argument, while the question is much harder over $\bar{\mathbb{Q}}$ when the dimension of the abelian variety is at least four. This was first proved by Chai and Oort assuming André–Oort conjecture and based on their work, Tsimerman proved the same result unconditionally using some analytic number theoretic argument. The part of André–Oort conjecture used by Chai and Oort has been proved recently by the work of many people. In this talk, I will state the conjecture and sketch the proof of Chai and Oort. If time permits, I will talk a bit about the main ingredients used in the prove of the André–Oort conjecture.

Thursday, September 24$^{\text{th}}$, at 12:45 pm
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