

TITLE: Avoiding Jacobians.

ABSTRACT: It is classical that, for example, there is a simple abelian variety of dimension 4 which is not the jacobian of any curve of genus 4, and it is not hard to see that there is one defined over the field of all algebraic numbers $\overline{\mathbf{Q}}$. In 2012 Ching-Li Chai and Frans Oort asked if there is a simple abelian fourfold, defined over $\overline{\mathbf{Q}}$, which is not even isogenous to any jacobian. In the same year Jacob Tsimerman answered “yes”. Recently Umberto Zannier and I have done this over the rationals \mathbf{Q} , and with “yes, almost all”. In my talk I will explain “almost all” the concepts involved.