

Speaker: Dino Lorenzini

Title: Regular models of curves and wild quotient singularities

Abstract: The regular models of a curve are key objects in the study of the curve, and we will start, as motivation for further study of such models, by surveying various instances where information about the special fiber of a regular model provides information about its generic fiber (such as rational points, index, Tamagawa number of the Jacobian, etc). Regular models can be constructed from normal models by resolving singularities. Every curve has a regular model obtained from the quotient of its semistable model by resolving only quotient singularities. The resolution of quotient singularities is well understood when the quotient is tame; in the context of models of curves, the quotient singularities are tame when the residue characteristic p is larger than $2g + 1$, where g is the genus of the curve. We will discuss in this talk the case where $p < 2g + 2$ and report on some new results on wild $\mathbb{Z}/p\mathbb{Z}$ -quotient singularities.