

Harvard-MIT Algebraic Geometry Seminar

Good Completions of Néron Models and Moduli of Sheaves on Curves

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Given a family of Abelian varieties A_t parametrized by a Zariski open subset U of an algebraic curve B (or, more generally, an open subset of a Dedekind scheme), the associated Néron model $N(A_t)/B$ is a canonical *partial* completion of the family A_t to a family of schemes over all of B . The Néron model is only a partial completion in the sense that it is not proper over B . Serge Lang asked if the Néron model always admits a full completion.

In his book “Fundamental of Diophantine Geometry,” Lang defined a Good Completion of a Néron model to be a certain type of full completion that enjoys nice properties and asked if every Néron model admits a Good Completion. In my talk, I will present an approach to constructing Good Completions for families of Jacobian varieties using the theory of moduli of sheaves on curves.

In trying to construct Good Completions in this manner, one is naturally led to consider some questions concerning the local structure of the moduli space of rank 1, torsion-free sheaves on a singular curve. I will discuss some results concerning the local geometry of this moduli space that I hope are of independent interest.

Tuesday April 28th

3:00 p.m.

MIT (24-115)