VANISHING THEOREMS FOR LOG CANONICAL PAIRS
WITH APPLICATIONS

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Abstract

A conjecture of Shafarevich predicted that any curve mapping to the stack $M_g$ must be hyperbolic. In particular no projective rational or elliptic curves admit a non-trivial map there. Viehweg’s Conjecture is a higher dimensional generalization of this conjecture and predicts that if $B$, a not necessarily projective variety, admits a generically finite map to the moduli stack of smooth canonically polarized varieties, then the Kodaira dimension of $B$ has to be maximal. I will explain a refined version of this conjecture and recent work (joint with Kebekus) towards confirming the Refined Viehweg Conjecture. This makes use of results on extending differential forms (joint with Greb, Kebekus, and Peternell) and in turn vanishing theorems for log canonical pairs. The latter uses a newly developed theory of Du Bois pairs which are a relative version of Du Bois singularities and a recent result (joint with Kollár) proving that any union of log canonical centers has Du Bois singularities. I will explain as much of these results and their interconnections as time permits.

Friday, April 23
3:15 p.m.
Room 383-N

http://tinyurl.com/StanfordAGSeminar