

## Algebraic Geometry Seminar

### *Wall crossings for $K$ -moduli spaces*

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**Abstract:** K-stability has become a central tool in the study of compact moduli of Fano varieties. In this talk I will discuss K-stability compactifications of the moduli space of log Fano pairs  $(\mathbb{P}^2, aC)$ , where  $C$  is a plane curve of degree at least 4 and  $a$  is a rational number. We establish a wall-crossing framework to study the behavior of these moduli spaces as the weight  $a$  varies. We show that when  $a$  is small, the K-moduli compactification is isomorphic to the GIT moduli space, and that the first wall crossing is a weighted blowup of Kirwan type. We describe all wall-crossings for degree 4, 5 and 6 and relate the final K-moduli spaces to Hacking's moduli space and some compact moduli of K3 surfaces. This is joint work with K. DeVleming and Y. Liu.

Monday, February 10 at 4:00 PM in 427 SEO