ABSTRACTS OF SEMINAR TALKS, SPRING 2018

In this document, you can find the abstracts of the Algebraic Geometry Student Seminar talks from Spring 2018. They are listed from the more recent to the older ones.

JANUARY 30

Speaker: Franco

Title: Moduli of stable pairs on curves

Abstract: Pairs are the datum of a vector bundle together with a section. These objects were first introduced by Bradlow and Garcia-Prada, as relevant physical objects. Moduli spaces of stable pairs on curves are an interesting intersection of several areas of algebraic geometry: curves in projective space, moduli spaces, and the minimal model program in relation to wall crossing. We’ll explore the interplay between these aspects following the paper by Bertram “Stable pairs and log flips”.


JANUARY 23

Speaker: Joaquín

Title: Bounding singular surfaces via Chern numbers

Abstract: It is known that given a projective surface with mild singularities we can obtain a minimal model by contracting a sequence of curves. A natural question is which invariants of the surface can bound the number of such contractions. In this talk, I will show that a linear combination of the Chern numbers, motivated by the BMY inequality, is one of such invariants. As an application, I will discuss how to use such result to prove that certain sets of singular surfaces with bounded Chern numbers can be put together in a compact family.

Speaker: Chuanhao

Title: Zeros of log-one-forms and log-mixed Hodge modules

Abstract: M. Popa and C. Schnell have shown that, for any projective smooth variety of general type, there exists no non-vanishing global holomorphic one-form on it. To prove this result, they use generic vanishing theorem of Saito’s mixed Hodge modules (MHM). To generalize this result to a log-setting, we need some logarithmic comparison results in MHM to build a relation between log-one-forms and MHM.