

## Algebraic Geometry Seminar

*The Miyaoka-Yau inequality for minimal models of general type and uniformization.*

Behrouz TAJI (Northwestern University.)

**Abstract:** By proving Calabi's conjecture, Yau proved that the Chern classes of a compact manifold with ample canonical bundle encode the symmetries of the Kahler-Einstein metric via a simple inequality – the so-called Miyaoka-Yau inequality. Furthermore it was shown that in the case of equality, the universal cover is the ball. Later, Tsuji established the MY inequality for smooth minimal models of general type by constructing singular Kahler-Einstein metrics. The singularity of these metrics are usually a major obstacle towards uniformization; a problem that has not yet been resolved via analytic methods. In a joint project with Greb, Kebekus and Peternell, we take a different approach, via Hermitian-Yang-Mills theory and Simpson's groundbreaking work on complex variation of Hodge structures, and we prove the MY inequality for minimal models of general type and establish a uniformization result for their canonical models.

Wednesday, October 12 at 4:00 PM in SEO 427