

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Howard Nuer
University of Illinois Chicago

Date: Wednesday, November 14, 2018

Time: 3:00 PM

Location: 258 Hurley Hall



Lecture Title:

**MMP and wall-crossing for Bridgeland moduli spaces on
Enriques and bielliptic surfaces**

Abstract

Since Bridgeland introduced his mathematical formulation of Douglas's π -stability, Bridgeland stability conditions have become a powerful tool for answering many questions in the study of coherent sheaves on varieties, especially with regard to the birational geometry of their moduli. In this talk, I will report on the application of this perspective to the study of stable sheaves on Enriques and bielliptic surfaces. In joint work with K. Yoshioka, we prove that any two moduli spaces of Bridgeland stable objects of Mukai vector v with respect to two generic stability conditions are birational. We achieve this by completely classifying the geometric behavior induced by crossing any given wall W . We further conjecture that all minimal models of these (often singular) moduli spaces arise as Bridgeland moduli. In solo authored work, I obtain a similar classification for bielliptic surfaces, proving on the way many heretofore unknown fundamental results about moduli of sheaves and Bridgeland stable objects on bielliptic surfaces (such as the existence of coarse projective Bridgeland moduli spaces and criteria for their nonemptiness).