

## **TAUTOLOGICAL CLASSES, PERVERSE FILTRATIONS, AND MODULI OF ONE-DIMENSIONAL SHEAVES**

**Speaker: Weite Pi**  
**Yale University**

**Time: Fri., Dec. 20th, 14:00-15:00**

**Venue: SCMS Room 102-104**

### **Abstract:**

Tautological classes have been instrumental in the cohomological study of moduli of bundles and sheaves since the 1980s. A natural construction using these classes, called the Chern filtration, has played a crucial role in recent proofs of the  $P=W$  conjecture, where it is identified with the perverse filtration on moduli of Higgs bundles induced by the Hitchin fibration — a phenomenon now known as “ $P=C$ ”. In this talk, I will discuss an analog of this phenomenon for moduli of 1-dimensional sheaves on del Pezzo surfaces. I will survey recent progress, highlight key differences from the  $P=W$  conjecture, and explain some predictions on the two filtrations. Based on a series of papers joint with Y. Kononov, W. Lim, M. Moreira, J. Shen, F. Si, and F. Zhang.