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

Speaker: Weite Pi
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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.