

*Department of Mathematics,
University of California San Diego*

Math 208 - Algebraic Geometry Seminar

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Blowup formulas for virtual sheaf-theoretic invariants on projective surfaces

Abstract:

For a smooth projective surface X , natural objects of study are its moduli spaces of (semi-) stable coherent sheaves. In rank one, their structural invariants are well-understood, starting with Göttsche's famous formula for the Betti numbers of the Hilbert schemes of points of X in terms of the Betti numbers of X itself. Even for rank two, however, little is known. There are results for particular choices of X by Yoshioka and others, and a blowup formula for virtual Hodge numbers due to Li-Qin. In general, the moduli spaces are non-smooth and one often studies virtual analogues of invariants, which are better behaved and have connections to physics. For example, there is an elegant conjectural formula for the virtual Euler characteristics of rank 2 moduli spaces due to Göttsche and Kool. I will present joint work with Y. Tanaka on a blowup formula for virtual invariants of moduli spaces of sheaves on a surface, which presents a step towards proving an analogue of Li-Qin's blowup formula for the virtual Euler characteristic.

Special Note:

Pre-talk at 10:30am

Host: Dragos Oprea

Friday, October 15, 2021

11:00 AM

**Contact Samir Canning at srcannin@ucsd.edu
for zoom info.**
