

SBU DEPARTMENT OF MATHEMATICS &  
INSTITUTE FOR MATHEMATICAL SCIENCES

# Algebraic geometry seminar

Dawei Chen

Boston College / IAS

## *Volumes and intersection theory on moduli spaces of abelian differentials*

Computing volumes of moduli spaces has significance in many fields. For instance, the celebrated Witten's conjecture regarding intersection numbers on the Deligne-Mumford moduli space of stable curves has a fascinating connection to the Weil-Petersson volume, which motivated Mirzakhani to give a proof via Teichmüller theory, hyperbolic geometry, and symplectic geometry. The initial two other proofs of Witten's conjecture by Kontsevich and by Okounkov-Pandharipande also used various ideas in ribbon graphs, Gromov-Witten theory, and Hurwitz theory. In this talk I will introduce an analogue of Witten's intersection numbers, defined on the Bainbridge-Chen-Gendron-Grushevsky-Moeller compactification of moduli spaces of Abelian differentials, that can be used to compute the Masur-Veech volumes. This is joint work with Moeller, Sauvaget, and Zagier (arXiv:1901.01785).

Wednesday - February 13, 2019  
Room Math Tower P-131      4:00 pm