

*Fall 2024*

# Geometry and Topology Seminar

Title

*Simplicial volume and isolated, closed totally geodesic  
submanifolds of codimension one*

Speaker:           Yuping Ruan, Northwestern University  
Date:               December 21, 2024  
Time:               10:30AM  
Tencent Meeting:   890-686-6792

**Abstract:** We show that for any closed Riemannian manifold with dimension at least two and with nonpositive curvature, if it admits an isolated, closed totally geodesic submanifold of codimension one, then its simplicial volume is positive. As a direct corollary of this, for any nonpositively curved analytic manifold with dimension at least three, if its universal cover admits a codimension one flat, then either it has non-trivial Euclidean de Rham factors, or it has positive simplicial volume. This is based on a joint work with Chris Connell and Shi Wang, arXiv:2410.19981.