

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

**NON-PERTURBATIVE TOPOLOGICAL
RECURSION AND THE GENERALIZED
VOLUME CONJECTURE**

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MCS B31, Nov 2, 2022, 4-5pm

Tea: 3:45pm in Room B24

Abstract: I will discuss the relationship between topological recursion and the generalized volume conjecture for hyperbolic knots. The conjecture states that there is asymptotic agreement between three invariants: the colored Jones polynomials of the knot, the partition function of Chern-Simons theory with complex gauge group $SL(2, \mathbb{C})$ on the knot complement, and the non-perturbative wave-function arising from topological recursion on the A-polynomial of the knot. I will also discuss a new algorithm for computing topological recursion via higher quantum Airy structures that uses graph sums and an efficient graph generation algorithm, which was used to verify this conjecture to higher order than was previously accessible.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin (yslin@bu.edu) or Brian Williams (bwill22@bu.edu) for more information.