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Seminar

Knots and Primes, and a Pro-2 Tensor Product of Vector Spaces

Prof. Mike Wong University of Ottawa

<u>Abstract:</u> : The Alexander polynomial can be understood as encoding the first homology of the infinite cyclic cover of the exterior of a knot. Is there a reasonable analogous understanding of its categorification, knot Floer homology? In particular, what is the sutured Floer homology of the infinite cyclic cover of the exterior of a knot? Based on a computation using bordered Floer bimodules, it seems that the answer, if it made sense, would take the form of an infinite tensor product of bimodules. But such objects do not behave well at all. Inspired by a parallel story in algebraic number theory, we are led to consider instead profinite tensor products (corresponding to profinite cyclic covers), which, once defined, will have much better properties. In this talk, I will explain the story above, and outline the construction of a pro-2 tensor product as well as some potential future directions. This is joint work in progress with David Treumann.

Date:	June 26, 2025 (Thursday)
Time:	3:00pm (Hong Kong Time)
Venue:	Room 222, Lady Shaw Building,
	The Chinese University of Hong Kong

All are Welcome