BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

CONTACT MONOPOLES AND LEGENDRIAN KNOTS

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Abstract: In this talk I present a novel approach to study Jones polynomial of knots and its possible categorification, stemming from a supersymmetric Chern-Simons Yang-Mills model on a three dimensional contact manifold. In particular, I will discuss a novel cohomological Wilson loop operator which wraps a Legendrian knot and how its expectation localizes to the moduli space of Bogomolny monopoles on a three dimensional contact manifold with a Legendrian knot defect. I will pay a special emphasis on a natural holomorphic presentation that emerges and discuss solutions to classical equations of motion that follow from localization. It is hoped this approach simplifies earlier attempts to semiclassically analyze quantum invariants of knots for all values of the Chern-Simons level k.

See `http://math.bu.edu/research/geom/seminar.html` or contact Siu-Cheong Lau (*scllouis@bu.edu*) or Brian Williams (*bwill22@bu.edu*) for more information.