

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

**A CATALOGUE OF TWISTS FOR
SUPERSYMMETRIC QUANTUM FIELD
THEORY**

Chris Elliott
University of Massachusetts Amherst

September 25, 2019, 4:00 – 5:00pm
Math/Computer Science, Room B39
111 Cummington Street, Boston

Tea: 3:45pm in Room B24

Abstract: The theory of Factorization Algebras, developed by Costello and Gwilliam, provides a mathematical way of studying quantum field theory. In this talk I'll discuss joint work with Pavel Safronov and Brian Williams, in which we develop the theory of "topological twisting" for supersymmetric theories using this technology. This is a procedure that starts with a supersymmetric quantum field theory on \mathbb{R}^n that depends on a choice of Riemannian metric, and produces a new quantum field theory that is defined on more general n -manifolds, and only depends on a coarser structure than a metric such as a choice of orientation. We classify and describe all examples of quantum field theories in all dimensions that arise by twisting a supersymmetric gauge theory.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin (yslin@bu.edu) or Siu-Cheong Lau (lau@math.bu.edu) for more information.