NUMBER THEORY
SEMINAR

Non-orientable enumerative problems in $\mathbf{A}^1$-homotopy theory

Andrew Kobin
Emory University

Abstract: Many enumerative problems in classical algebraic geometry, such as counting lines on a smooth cubic surface, admit a solution over an arbitrary ground field k (of characteristic $\neq 2$) using Morel and Voevodsky's $\mathbf{A}^1$-homotopy theory. Recently, several authors have formulated and solved such "enriched" enumerative problems using Kass and Wickelgren's "enriched" Euler class, which takes values in the Grothendieck–Witt group of k and is only defined when the associated vector bundle is orientable. In joint work with Libby Taylor, we extend Kass–Wickelgren's construction to non-orientable vector bundles using a stacky construction. This allows us to enrich a larger class of enumerative problems, including the count of lines meeting 6 planes in $\mathbf{P}^4$.

Tuesday, November 16, 2021, 4:00 pm
Mathematics and Science Center: MSC W301

MATHEMATICS
EMORY UNIVERSITY