

TOPOLOGY SEMINAR

Guest Speaker: Aravind Asok
University of Southern California



Date: Tuesday, October 27, 2020

Time: 2:30 PM

Location: Zoom

Zoom Link: <https://notredame.zoom.us/j/97262637721>

Lecture Title:

Algebraic vs. topological vector bundles

Abstract

Suppose X is your favorite (smooth) complex algebraic variety. When does a complex vector bundle on the complex manifold defined by X admit an algebraic structure? This is a long-studied question with close links to various classical questions in the cohomology of algebraic varieties. I will explain how when X is affine, this problem can be reformulated in entirely (motivic) homotopy theoretic terms, and discuss an approach to analyzing this question for arbitrary X . In particular, I will discuss some results obtained jointly with Jean Fasel and Mike Hopkins about algebraic vector bundles on low-dimensional smooth projective varieties and projective space (not necessarily low dimensional).