



Speaker: Fabian Hebestreit
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3:00 PM

258 Hurley Hall

Title: Stable moduli spaces of odd dimensional manifolds

Abstract:

Understanding characteristic classes of manifolds bundles is one of the key topics in the study of manifolds and their automorphisms. The advent of cobordism categories through the work of Madsen, Tillmann and Weiss introduced a new method for studying such groups. Its application in high dimensions was spearheaded by Galatius and Randal-Williams in the case of highly connected even-dimensional manifolds by identifying groups of stable characteristic classes with the cohomology of certain computationally accessible infinite loopspaces. Results of Ebert, however, sharply limited the efficacy of usual cobordism categories in odd dimensions. I will report on joint work with Nathan Perlmutter on an enhancement of odd dimensional cobordism categories, that avoid these difficulties. In particular our results imply that stable characteristic classes also form the cohomology of a certain infinite loop space in this case. In contrast to the even dimensional situation, however, the homotopy type of this space remains largely unidentified and its exploration is work in progress.