A PRODUCT OPERATION ON DISK FIBER BUNDLES, AND A CONFIGURATION SPACE WITH MOUSE DIAGRAMS

Xujia Chen

Harvard University

CCDS 365, Apr 17, 2024, 4-5pm

Tea: 3:45pm in Room 365

Abstract: In this talk we will be concerned with smooth, framed fiber bundles whose fibers are the standard d-dimensional disk, trivialized along the boundary. "Kontsevich’s characteristic classes" are invariants defined for these bundles: given such a bundle \( \pi : E \to B \), we can associate to it a collection of cohomology classes in \( H^*(B) \). On the other hand, there is a "bracket operation" for these bundles defined by Sander Kupers: namely, given two such bundles \( \pi_1 \) and \( \pi_2 \) as input, we can output a "bracket bundle" \([\pi_1, \pi_2]\). I will talk about this bracket bundle construction and a formula relating the Kontsevich’s classes of \([\pi_1, \pi_2]\) with those of \( \pi_1 \) and \( \pi_2 \). The main input of the proof is a novel but very natural configuration space generalizing the Fulton-MacPherson configuration spaces. This is a work in progress joint with Robin Koytcheff and Sander Kupers.

See http://math.bu.edu/research/geom/seminar.html or contact Yu-Shen Lin (yslin@bu.edu) or Brian Williams (bwill22@bu.edu) for more information.