Topology Seminar

Yajit Jain

of Brown University will be speaking on

Topologically Trivial Families of Smooth h-Cobordisms

on May 2 at 4:30 in MIT Room 2-131 After using smoothing theory to introduce a notion of exotic smooth structures on manifold bundles, we will discuss an equivalent class of objects: smooth bundles of h-cobordisms with a topological trivialization. Using work of Dwyer, Weiss, and Williams, we will associate to such families an invariant called the smooth structure class, which is closely related to the higher Franz-Reidemeister torsion of Igusa and Klein. We will illustrate two proofs of a duality theorem for the smooth structure class. This theorem generalizes Milnor's duality theorem for Whitehead torsion. A consequence of this result is the rigidity conjecture of Goette and Igusa, which states that, after rationalizing, stable exotic smoothings of manifold bundles with closed even dimensional fibers do not exist.

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