KIYOSHI IGUSA, Brandeis University, Waltham, MA
Hatcher handles and the rigidity conjecture

The rigidity conjecture says that the fiberwise smooth structure of a topological manifold bundle with closed even dimensional fibers is stably rationally unique. Sebastian Goette and I have just completed our work on the construction of all rational stable smooth structures on all smooth bundles with closed odd dimensional manifold fibers. We use Hatcher handles which are based on Hatcher's elegant geometric construction of exotic smooth structures on disk bundles. This talk will explain the construction and statements for odd dimensional fibers and the evidence we have for the nonexistence of exotic smooth structures for even dimensional fibers.