

Strong cohomological rigidity problem of a Hirzebruch surface bundle

Hiroaki Ishida

A Bott tower is an iterated \mathbb{P}^1 -bundle such that each fibration is the projectivization of a decomposable complex vector bundle of rank 2. Manifolds appeared in a Bott tower is called a Bott manifold. By composing the first two fibrations, we have a fiber bundle $B_{n+2} \rightarrow B_n$ over an n -dimensional Bott manifold whose fiber is a Hirzebruch surface. In this talk we discuss whether an automorphism of $H^*(B_{n+2})$ as an $H^*(B_n)$ -algebra is induced by a bundle automorphism or not.