BOTT MANIFOLD AND COHOMOLGICAL RIGIDITY

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A *Bott tower* is a sequence $B_n \to B_{n-1} \to \cdots \to B_1 \to B_0$ where B_0 is a point and B_i is a $\mathbb{C}P^1$-bundle over B_{i-1} for $i = 1, \ldots n$. Each B_i is a called the *i-th stage Bott manifold*. One can extend this definition to define a *generalized Bott tower and manifold* to be a sequence of complex space bundles. One of the interesting question in toric topology asks whether two (generalized) Bott manifolds B_n and B'_n are homeomorphic (or diffeomorphic) provided their cohomologies are isomorphic as graded rings. This is called the *cohomological rigidity question* for (generalized) Bott manifolds. In this talk we discuss some related back ground material from toric theory and some positive results on the question.

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