

Rigidity and Vanishing of Basic Dolbeault Cohomology of Sasakian Manifolds

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Abstract

The basic Dolbeault cohomology of a Sasakian manifold is an invariant of its characteristic foliation, the orbit foliation of the Reeb flow. In the special case that all orbits are closed it coincides with the Dolbeault cohomology of its orbit space, a Kähler orbifold. We will see that the associated basic Hodge numbers only depend on the underlying CR structure. Moreover, we will show a relation between the Dolbeault cohomologies of the Sasakian manifold and the union of its closed Reeb orbits. This is a joint work with Oliver Goertsches and Hiraku Nozawa.