Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5)
Vol. VI (2007), 15-37

A finiteness theorem for holomorphic Banach bundles

JÜRGEN LEITERER

Abstract. Let E be a holomorphic Banach bundle over a compact complex manifold, which can be defined by a cocycle of holomorphic transition functions with values of the form $\mathrm{id} + K$ where K is compact. Assume that the characteristic fiber of E has the compact approximation property. Let n be the complex dimension of X and $0 \leq q \leq n$. Then: If $V \to X$ is a holomorphic vector bundle (of finite rank) with $H^q(X, V) = 0$, then $\dim H^q(X, V \otimes E) < \infty$. In particular, if $\dim H^q(X, \mathcal{O}) = 0$, then $\dim H^q(X, E) < \infty$.

Mathematics Subject Classification (2000): 32F10 (primary); 32C37 (secondary).