

ГОДИШНИК НА СОФИЙСКИЯ УНИВЕРСИТЕТ „СВ. КЛИМЕНТ ОХРИДСКИ“

ФАКУЛТЕТ ПО МАТЕМАТИКА И ИНФОРМАТИКА

Том 97

ANNUAIRE DE L'UNIVERSITE DE SOFIA „ST. KLIMENT OHRIDSKI“

FACULTE DE MATHEMATIQUES ET INFORMATIQUE

Tome 97

---

A DOLBEAULT ISOMORPHISM FOR  
COMPLETE INTERSECTIONS IN  
INFINITE-DIMENSIONAL PROJECTIVE SPACE

BORIS KOTZEV

We consider a complex submanifold  $X$  of finite codimension in an infinite-dimensional complex projective space  $\mathbf{P}$  and a holomorphic vector bundle  $E$  over  $X$ . Given a covering  $\mathcal{U}$  of  $X$  with Zariski open sets, we define a subcomplex  $\mathcal{C}(X, E)$  of the Čech complex corresponding to the vector bundle  $E$  and the covering  $\mathcal{U}$ . For a special class of coverings  $\mathcal{U}$ , we prove that the complex  $\mathcal{C}(X, E)$  is acyclic when  $X$  is a complete intersection and  $\mathbf{P}$  admits smooth partitions of unity.

**Keywords:** infinite-dimensional complex manifolds, projective manifolds, vanishing theorems

**2000 MSC:** main 32L20, secondary 58B99

*Received December 15, 2004*

Faculty of Mathematics and Informatics  
“St. Kl. Ohridski” University of Sofia  
5, J. Bourchier blvd., 1164 Sofia  
BULGARIA  
E-mail: bkotzev@fmi.uni-sofia.bg