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VANISHING OF THE FIRST DOLBEAULT
COHOMOLOGY GROUP OF HOLOMORPHIC
LINE BUNDLES ON COMPLETE INTERSECTIONS
IN INFINITE DIMENSIONAL PROJECTIVE SPACE

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We consider a complex submanifold X of finite codimension in an infinite-dimensional complex projective space \mathbf{P} and prove that the first Dolbeault cohomology group of all line bundles $\mathcal{O}_X(n)$, $n \in \mathbb{Z}$, vanishes when X is a complete intersection and \mathbf{P} admits smooth partitions of unity.

Keywords: Dolbeault cohomology groups, infinite-dimensional complex manifolds, projective manifolds, vanishing theorems

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