

An Andreotti-Grauert theorem with L^r estimates

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Abstract. By a theorem of Andreotti and Grauert if ω is a (p, q) current, $q < n$, in a Stein manifold, $\bar{\partial}$ closed and with compact support, then there is a solution u to $\bar{\partial}u = \omega$ still with compact support. The main result of this work is to show that if moreover $\omega \in L^r(dm)$, where m is a suitable “Lebesgue” measure on the Stein manifold, then we have a solution u with compact support *and* in $L^r(dm)$. We prove it by estimates in L^r spaces with weights.

Mathematics Subject Classification (2010): 32W05 (primary); 32Q28 (secondary).