

Henkin, Gennadi Markovič; Leiterer, Jürgen

Andreotti-Grauert theory by integral formulas. (English) Zbl 0654.32001
Mathematical Research 43. Berlin (GDR): Akademie-Verlag. 270 p. (1988).

The Andreotti-Grauert theory is the theory of the cohomology of q -convex and q -concave manifolds. This monograph develops this theory from the viewpoint of explicit integral representation for solution of the Cauchy- Riemann equation for differential forms on strictly q -convex and q -concave domains. This method give us new proofs of remarkable results with uniform estimates. This results are: uniform approximation and uniform interpolation for $\bar{\partial}$ -cohomology classes on strictly q -convex domains, solution of the Levi problem for $\bar{\partial}$ -cohomology with uniform estimate, Andreotti-Vesentini separation theorem of the Dolbeault cohomology of order q on q -concave manifolds, the Rossi theorem on attaching complex manifolds along a strictly pseudoconcave boundary of real dimension ≥ 5 .

Brief contents. Chapter 1. Integral formulas and first applications. Chapter 2. q -convex and q -concave manifolds. Chapter 3. The Cauchy- Riemann equations on q -convex manifolds. Chapter 4. The Cauchy- Riemann equations on q -concave manifolds. Chapter 5. Some applications.

Reviewer: [S.Krendelev](#)

MSC:

- [32-02](#) Research exposition (monographs, survey articles) pertaining to several complex variables and analytic spaces
- [32A25](#) Integral representations; canonical kernels (Szegő, Bergman, etc.)
- [32F10](#) q -convexity, q -concavity
- [32W05](#) $\bar{\partial}$ and $\bar{\partial}$ -Neumann operators

Cited in **51** Documents

Keywords:

Andreotti-Grauert theory; cohomology of q -convex and q -concave manifolds; explicit integral representation; uniform estimates; uniform approximation; uniform interpolation; Levi problem; Andreotti-Vesentini separation theorem; Rossi theorem; Cauchy-Riemann equations